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ABSTRACT

A narrative description of enrollments, costs, and other detail, the document represents the first of a two-part national report of vocational education and manpower training during the school year 1972-73. The Project Baseline study, the third national report, presents the developments of Federal assistance programs throughout the nation and focuses attention on trends in vocational education and manpower training over the three-year period 1970-71 through 1972-73. The statistical tables, on which the study's conclusions were based, are presented in part 2 of the report. Findings related to enrollment growth reveal: (1) vocational education was still expanding in 1972-73; (2) growth is uneven--there is little indication of movement toward national equity over a three-year period; and (3) the 1972-73 growth rate dropped to its lowest point since 1962-63. Project Baseline research regarding fiscal policy at Federal and State levels indicates diminishing financial support resulting from inflation and other factors. Research also indicated that Federal and State reporting policies are limited and in need of reexamination. Three appendixes offer a resume of all the national tables in part 2 critical professional opinions, and suggestions. (MW)

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# LEARNING A LIVING ACROSS THE NATION
VOLUME III

## PROJECT BASELINE
THIRD NATIONAL REPORT
Baseline Year: 1972-73 (Fiscal Year 1973)
Part 1: Narrative Report

Prepared For

THE NATIONAL ADVISORY COUNCIL ON VOCATIONAL EDUCATION

By

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November 1974

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# INTRODUCTION

Learning A Living Across the Nation is the National report of a study of Vocational Education and manpower training.

In the 1960s four major Federal assistance programs were established to provide training for employment or retraining and upgrading of employment skills. ican industry with its advancing technology was to have an adequate supply of trained personnel. More importantly, every youth and adult was to have opportunities for skill training and job preparation, without which a substantial number were finding themselves unemployed, underemployed, or faced with unemployment on leaving school. This study is an effort to find out what is happening throughout the Nation under these Federal assistance programs -- The Manpower Development and Training Act of 1962, the Vocational Education Act of 1963, the Economic Opportunity Act of 1964, and the Vocational Education Amendments of 1968.

Volume III covers the school year 1972-73, which was Fiscal year 1973. It is divided into Part 1, a narrative description of enrollments, costs, and other detail; Part 2, the statistical tables upon which Part 1 is based; and Appendix A, the State profiles, which is available in xerox copy by request only. In Volumes I and II the statistics and explanatory narrative were not separated. The quantity of detail in Volume III is so great, however, that presentation of a narrative account in a separate part of the report may make it easier for the reader to digest.

A brief summary of the more important information contained in Volume III is found in the first section of the first chapter under "Significant Findings". Following this is a section on "Policy Implications", a new feature of the report this year. In it, the project staff and consultants and others who have read the report suggest policies and policy decisions at the Federal, State, and local levels as reflected in the findings. Specific recommendations are included in the final section of the first chapter. For the extremely busy reader the first chapter of the narrative thus contains the heart of Volume III.

Volume III differs from the two preceding volumes in another way, which was anticiapted when the study began. It focuses considerable attention on trends in Vocational Education and manpower training over the three-year period 1970-71 through 1972-73. One important purpose in undertaking the study was to establish baseline data over a four-year period -- therefore the name Project Baseline. In the second year, changes only could be noted. In the third year it was possible to see at least indications of trends, which relate to the original purposes of the Federal support legislation.

Continued attention is also given in Part 1 of Volume III to the nature of the information being collected. In Volume II serious deficiencies in the data were discussed. In Volume III some progress toward better data is reported; the extent of the problem remaining is examined and in somewhat greater detail.

Three appendices are attached to Part 1, largely for reference. Appendix A is an extensive item-by-item analysis of what has happened over the three-year period, first in Vocational Education, then in manpower training, based on National statistics. It repeats much of the information in Chapters 2 and 3, but includes a great deal more. It provides the reader of Part 1 with a convenient resume of all the National tables in Part 2.

Appendices B and C contain the results of two separate efforts in the third year of Project Baseline to gather critical professional opinions and suggestions which might enhance the value of the National study in its third and fourth years. Four leading authorities in specialized areas of Vocational Education and manpower training research were employed as consultants for this purpose, and their recommendations are included in Appendix B. Three National conferences of State Directors of Vocational Education or their representatives were held for the same purpose, and the recommendations of each conference are included in Appendix C.

The organized effort to gather, tabulate, analyze and report the information contained in this report need not be discussed here, except to note again its National scope. The Vocational Education data were supplied directly to Project Baseline by the Director of Vocational Education and his staff in each of the fifty States, the District of Columbia, and Puerto Rico. They were collected by a research staff of approximately fifteen persons, assisted by Technical Education Research Centers, Inc. (TERC), a National research organization with headquarters in Cambridge, Massachusetts, and research offices in Washington, D.C.; Champaign, Illinois; Atlanta, Georgia; Los Angeles, California; Montgomery, Alabama; Milwaukee, Wisconsin; Springfield, Massachusetts; Stillwater, Oklahoma; and Waco, Texas.

An important part of the research analysis for Volume III, as for the first two volumes, has been carried out in the Division of Vocational Education at the University of California in Los Angeles.

Also joining Project Baseline this year to assist in gathering data and carrying out the total effort was J.T. Hill Associates, a consulting firm based in Washington, D.C., with experience in private industry and manpower training.

Three Federal agencies have continued to contribute substantially to the goals of this effort through the interest, advice, suggestions, and constant support of professional staff members: the Bureau of Occupational and Adult Education, and the National Center for Educational Statistics, both in the U.S. Office of Education; and the Manpower Administration of the U.S. Department of Labor.

The National Advisory Council on Vocational Education, to which Congress has given the responsibility for this study, has continued to provide considerable effort on the part both of members of the council and of the staff.

The President of Northern Arizona University, the Project Director, the staff, and other members of the faculty who have repeatedly contributed

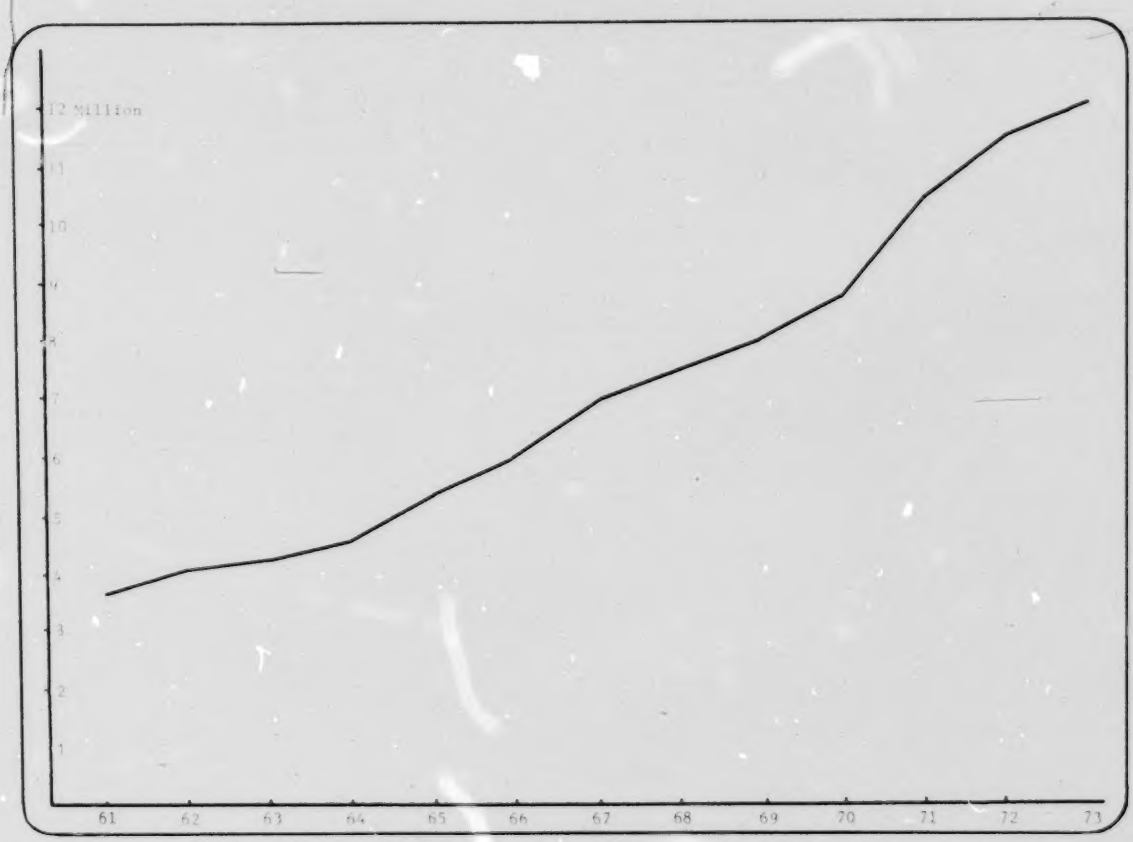
time and effort sincerely hope the results as reported in Part 1 and shown in statistical tables of Part 2 are beneficial to those who need this information.

# I. SUMMARY AND RECOMMENDATIONS

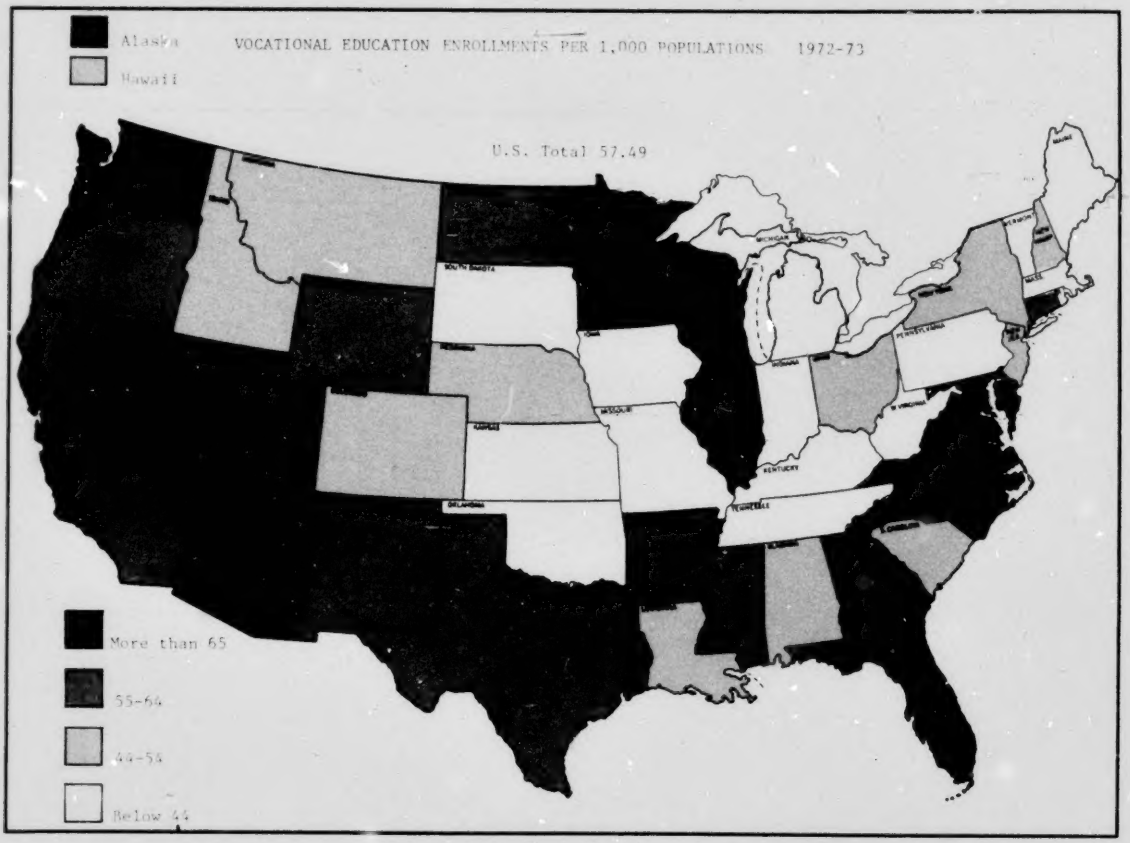
## Significant Findings

### Vocational Education

1. Enrollment in Vocational Education continued to rise in 1972-73, but much more slowly than for any year in nearly a decade. The growth rate was 4.10 percent compared to 10.54 percent the preceding year. The growth rates for secondary and post-secondary programs were only 1.74 percent and 3.56 percent respectively, well below the rates of 11.33 percent and 14.28 percent the previous year. The growth rate for adult programs, on the other hand, increased from 7.23 to 9.88 percent.



2. Wide variations among individual States in Vocational Education enrollment per 1,000 population did not change significantly in 1972-73. This situation results in considerably higher proportions of youth and adults being prepared for employment or homemaking in some States than in others. The figures ranged as low as twenty-two and twenty-six per 1,000 population to a high of 103. In other words, some States had up to four times as many students enrolled in Vocational Education in proportion to their population as other States. There were considerable fluctuations in the rate of increase or decrease in 1972-73; these appeared to narrow the gaps in some cases, but the opposite was true elsewhere.

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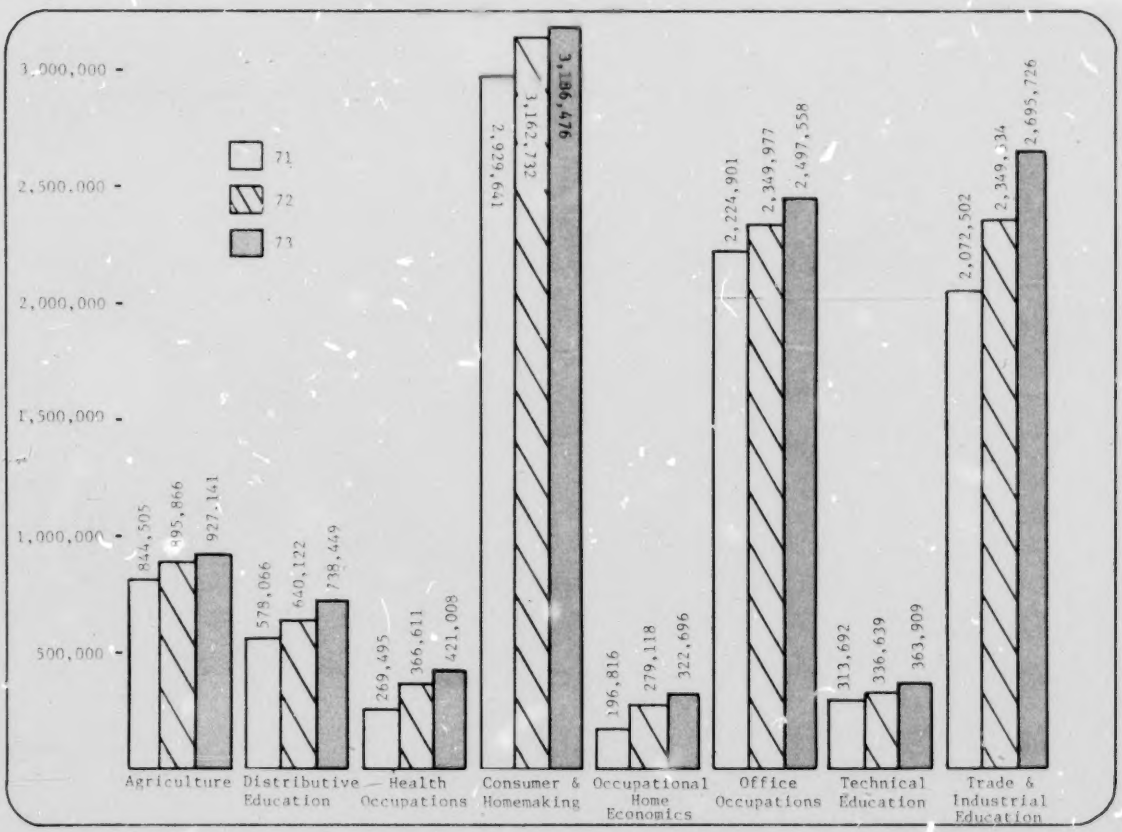
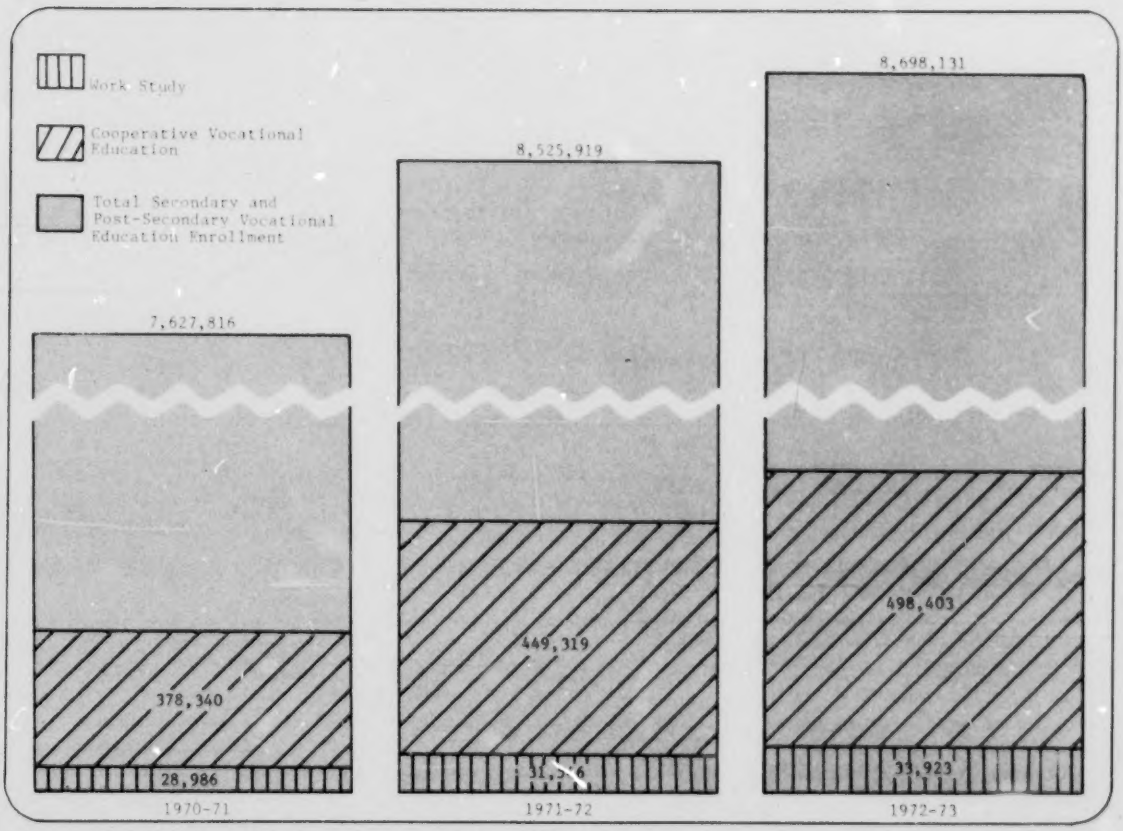
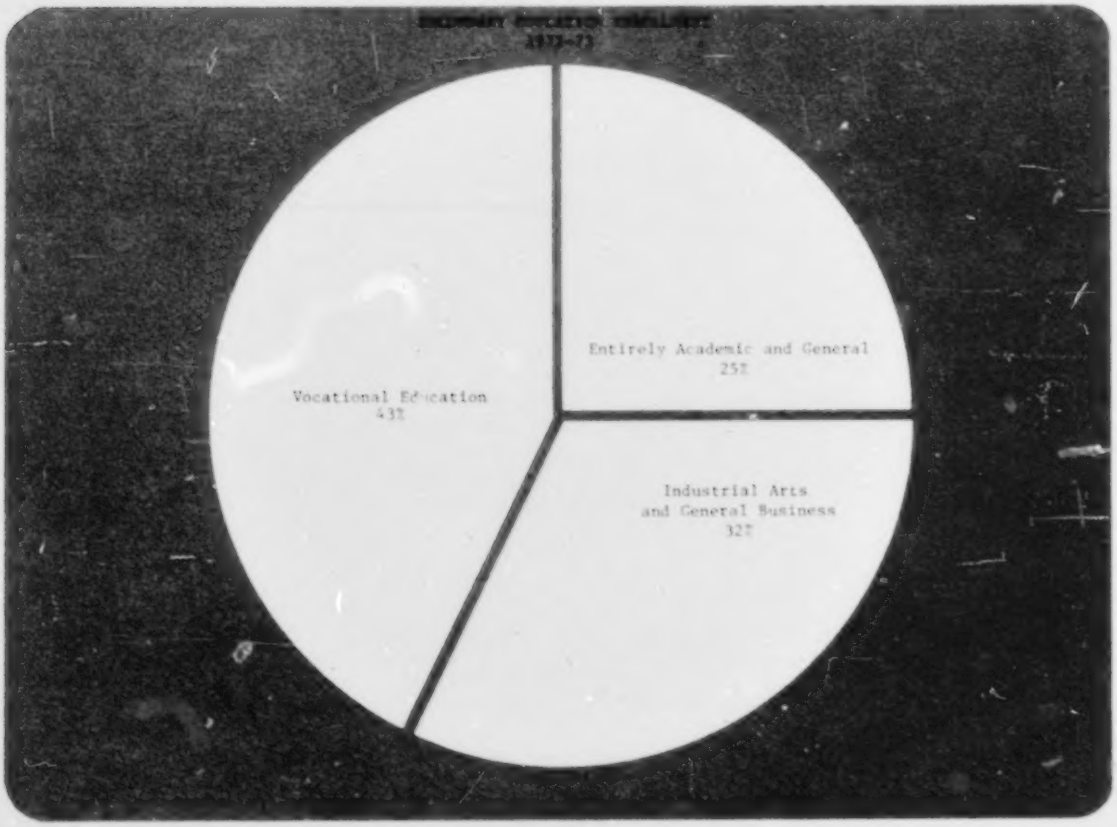
3. Occupationally, there were indications that trade and industrial education would soon lead all other areas in total enrollment, and technical education was headed for last place. Consumer and homemaking still led trade and industrial by nearly half a million students, but its growth rate was far behind. Trade and industrial education had the steepest growth curve over the three-year period of any of the occupational areas, followed by office occupations, distributive education, occupational home economics, health occupations and agriculture. Technical education was next to lowest in enrollment and last in rate of growth.



4. Cooperative and work study programs in Vocational Education remained largely stabilized at relatively low levels of activity throughout the three-year period. Cooperative education enrollments increased from 4.96 percent of the total secondary and post-secondary enrollment in 1970-71 to 5.27 percent in 1971-72, and 5.73 percent in 1972-73. Work study percentages remained very nearly the same for all three years, varying from 0.37 to 0.39 percent of secondary and post-secondary enrollment.

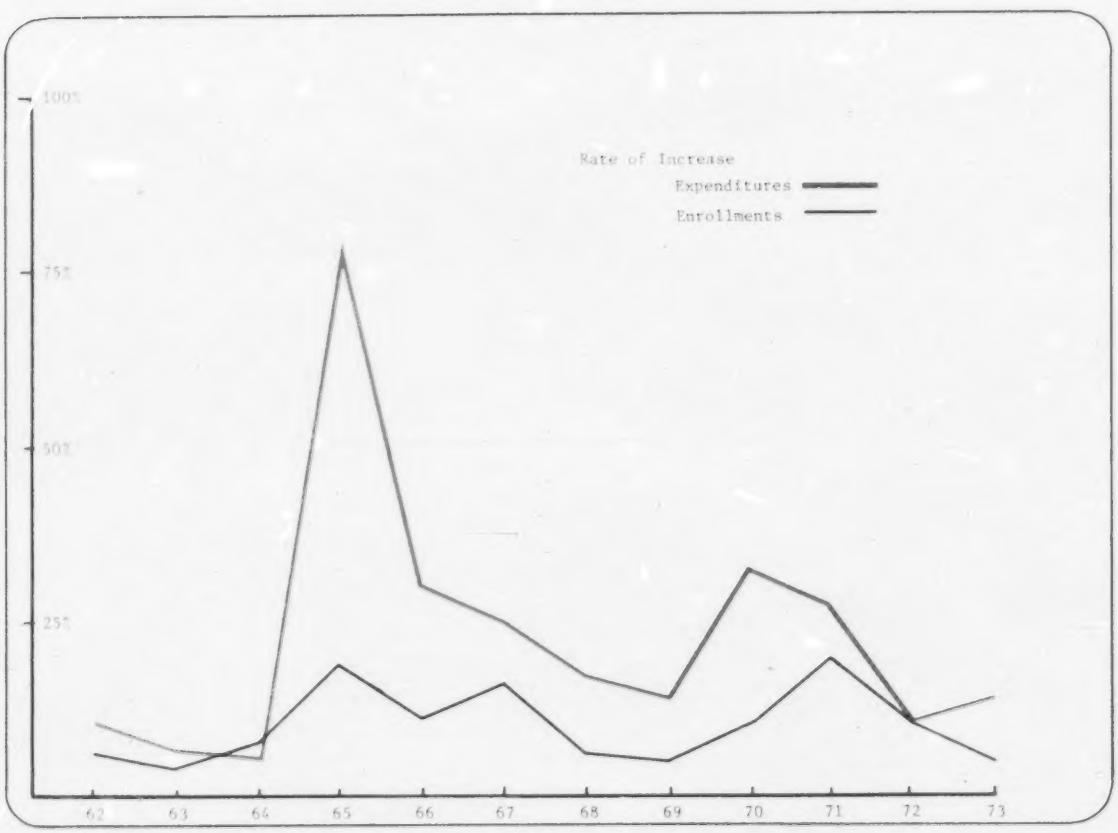


5. More than forty-two percent of all secondary school students in forty-one States, the District of Columbia and Puerto Rico were enrolled in Vocational Education courses in 1972-73. This was up from 39.5 percent in the same States the year before, and thirty-nine percent in 1970-71.[1] It includes consumer and homemaking, but omits a substantial number of students enrolled in general business and industrial arts who were receiving employment training. If all general business and industrial arts students had been added to those enrolled in Vocational Education, the total would have amounted to approximately three-fourths of the secondary education enrollment in the United States each year.

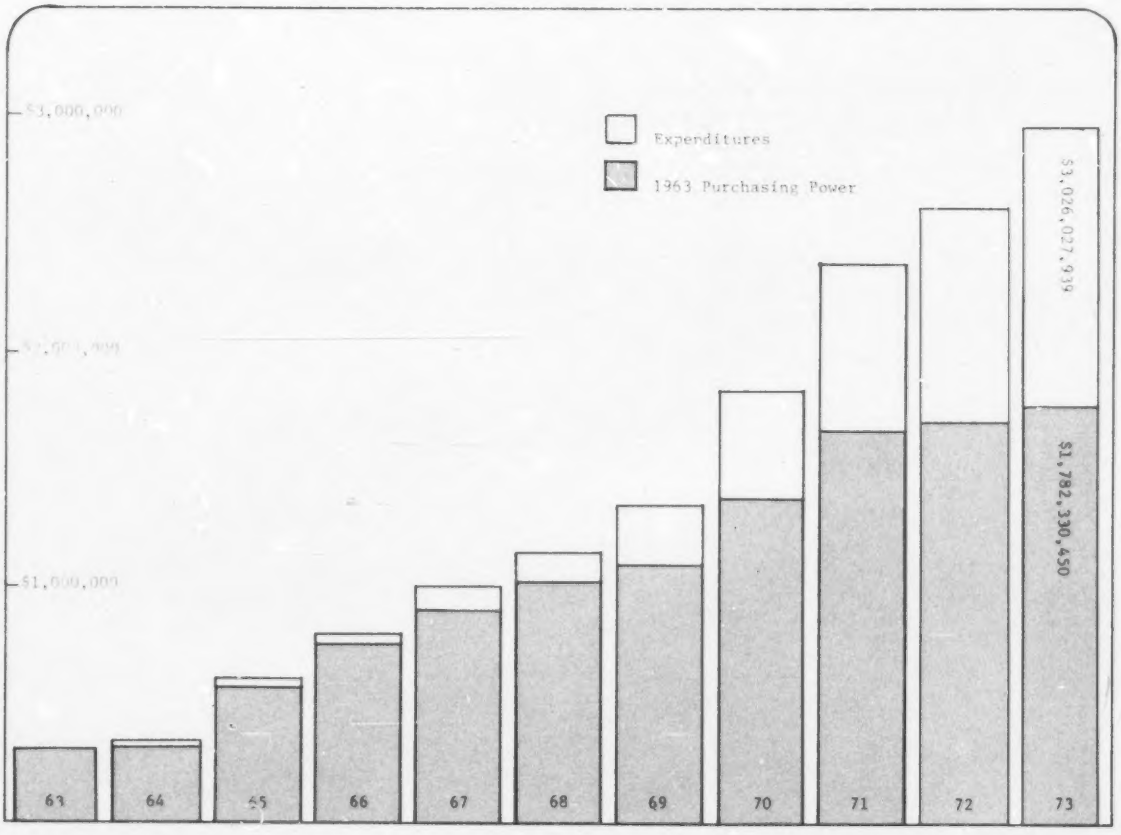



[1]Data were available from all States in 1971-72. Percentages for that year for all secondary students in the United States were nearly identical with those from the forty-three State agencies which supplied data in 1972-73. It is reasonable to assume, therefore, that the figure for 1972-73 would be representative of the Nation as a whole.

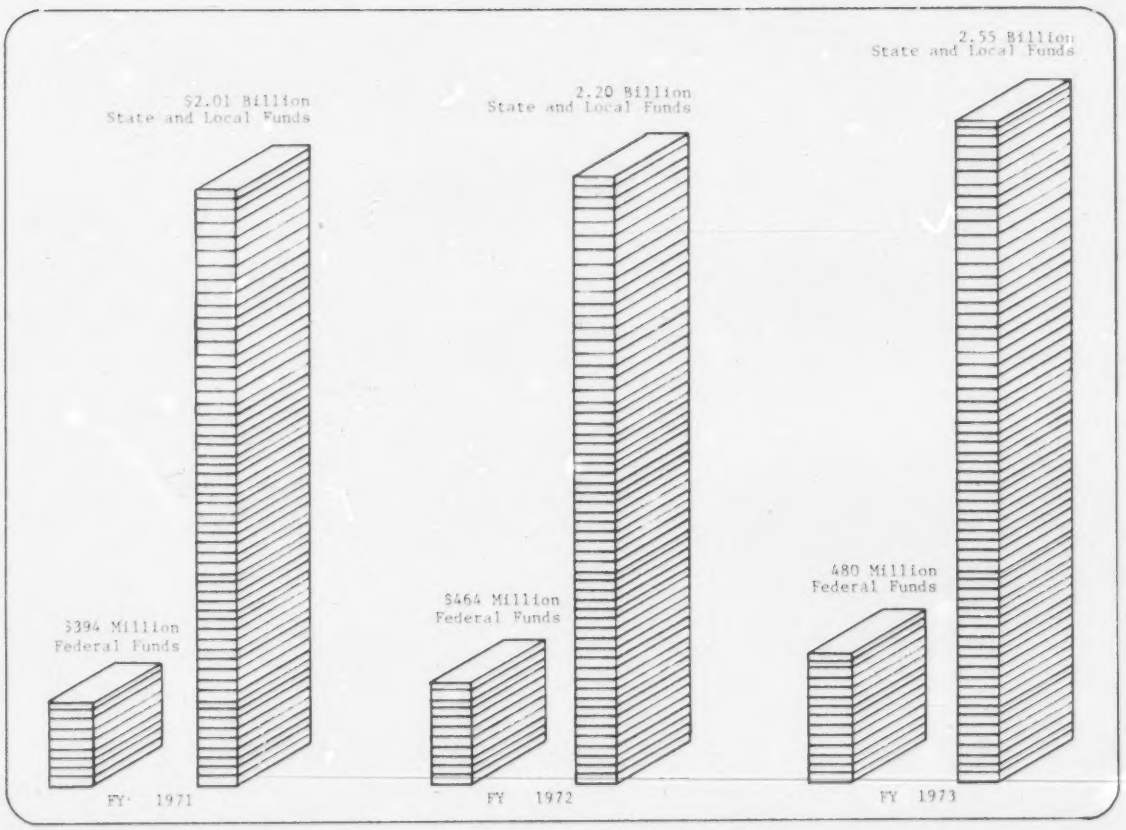
6. Total reported Federal, State, and local expenditures for Vocational Education -- like enrollments -- increased, but the rate of increase declined from FY 1971 through FY 1973. Total reported expenditures during that period increased from just under $2.4 billion to a little more than $3.0 billion. The rate of increase dropped from 28.55 to 10.64 percent in 1971-72, then increased slightly to 14.0 percent in 1972-73. This followed a ten-year pattern of accelerating and decelerating growth rates directly related to the enactment of major Federal legislation. The increase in expenditures in 1973 was an exception, possibly due to inflationary pressures on the States and local school districts.



7. Inflation cut the purchasing power of expenditures for Vocational Education nearly in half in the decade preceding 1972-73. Total Federal, State and local expenditures increased nearly ten-fold from 1963 to 1973, but less than six-fold in purchasing power. Total Vocational Education enrollment during the same period increased three-fold.

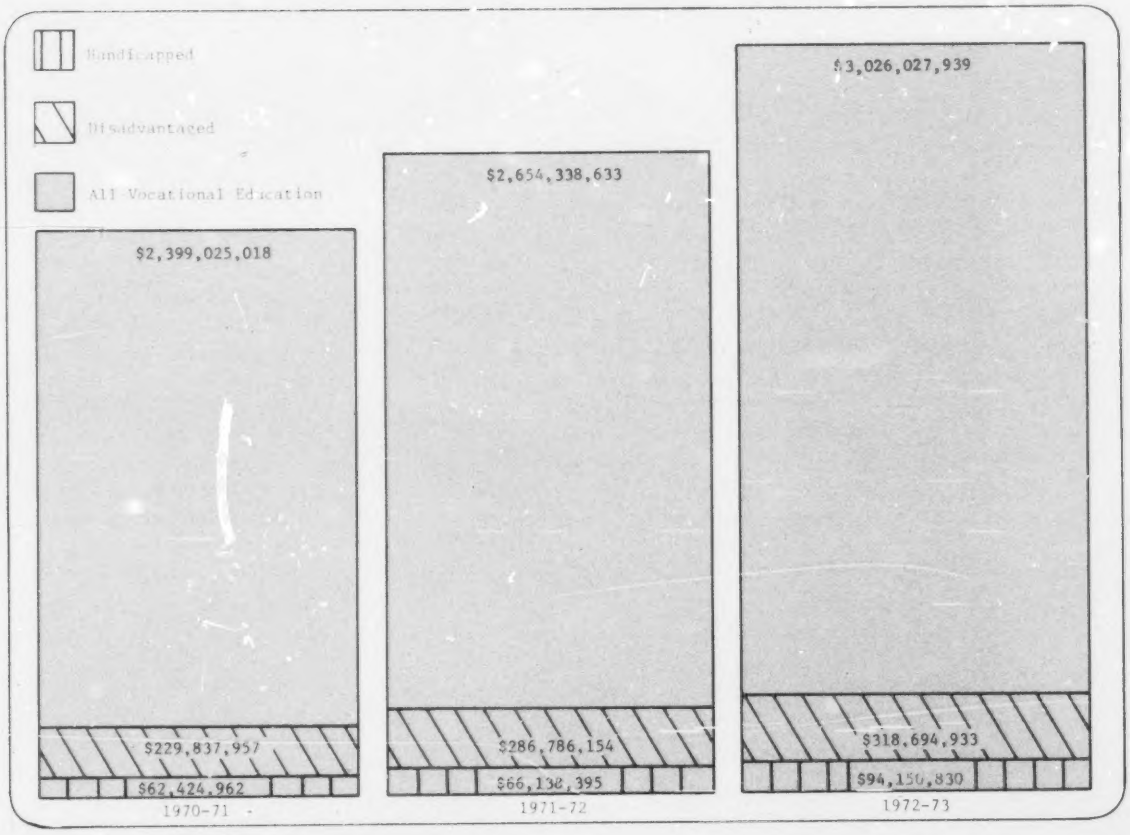


8. State and local expenditures for Vocational Education were approximately five times the amount of Federal expenditures each year during the three-year period 1971-73. As total expenditures increased from $2.4 billion to $3.0 billion, most of the increase came from the States and local school districts. It was from the States and local school districts that additional funds had to be sought to try to keep up with both enrollment growth and inflation.

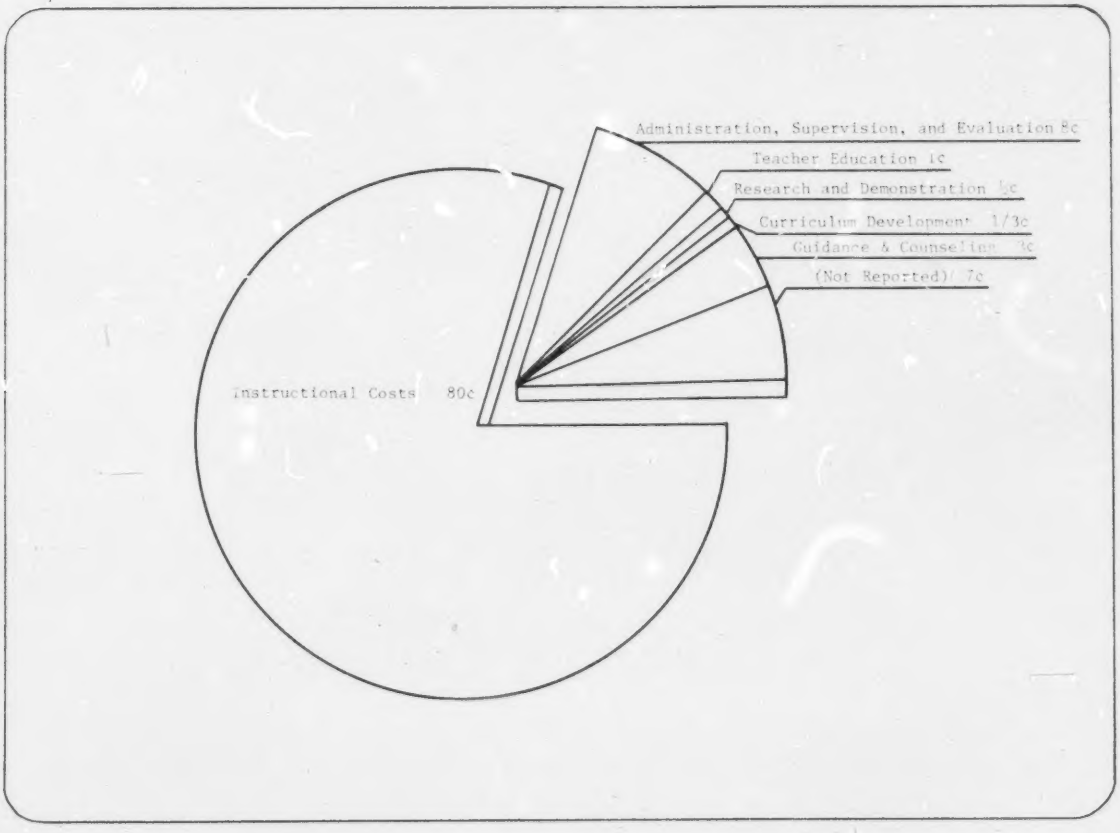


9. The reported cost per student in Vocational Education increased nearly ten percent in 1972-73, resuming a long-term trend after remaining almost stationary the year before. In 1971-72 it had been $229.02. In 1972-73 it was $250.82. Ten years before it had been $73.25; presumably, better reporting has accounted for some of the increase since then. The cost per student in 1971-72 and 1972-73 was held down by the adult programs, for which the cost per student declined both years.

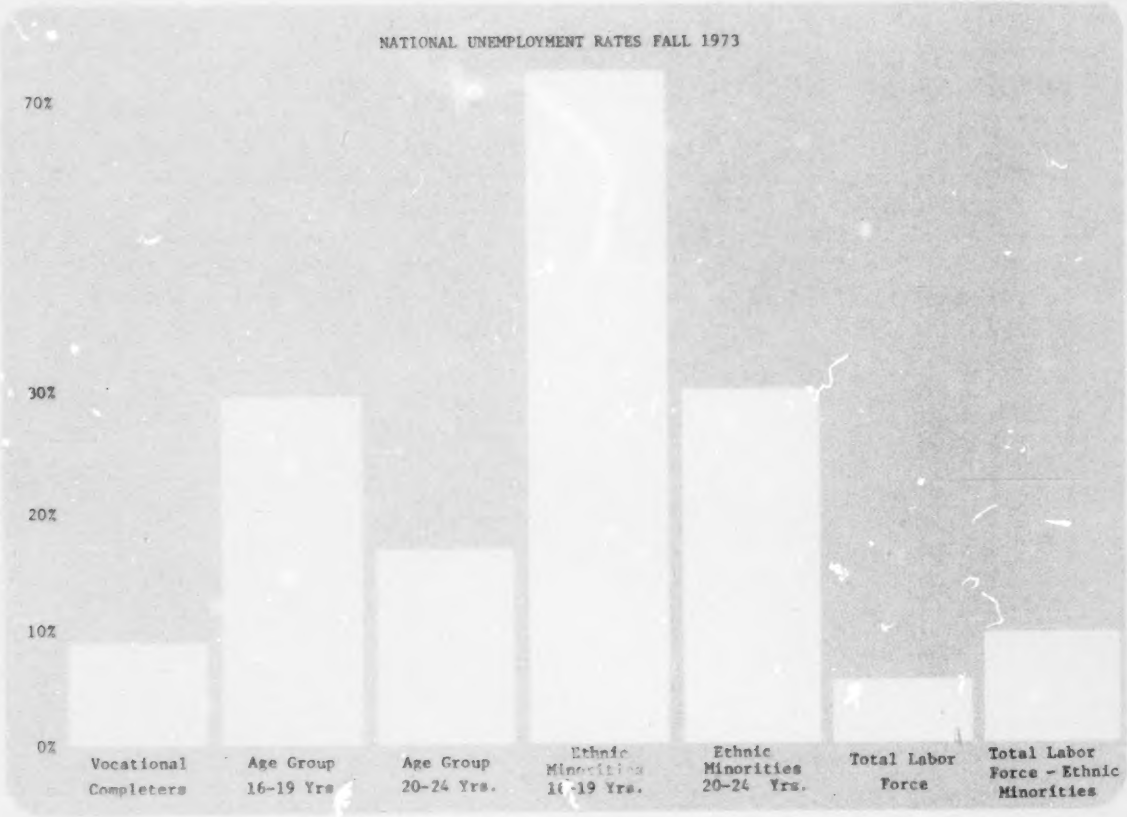
10. Total expenditures for disadvantaged and handicapped students in Vocational Education increased only enough in 1972-73 to maintain the relatively low percentages spent for students in these categories in previous years. The combined Federal, State and local expenditures for disadvantaged students were $318,694,933 compared to $286,786,154 the year before. This represented a drop of 0.3 percentage points of total funds used for the disadvantaged from 10.8 percent to 10.5 percent. Expenditures for handicapped students were $94,150,830 compared to $66,138,395 the preceding year. This represented an increase of 0.6 percentage points in total Vocational Education expenditures used for handicapped, from 2.5 percent to 3.1 percent. It should be kept in mind that these are percentages of total Vocational Education expenditures, not of Federal expenditures only.



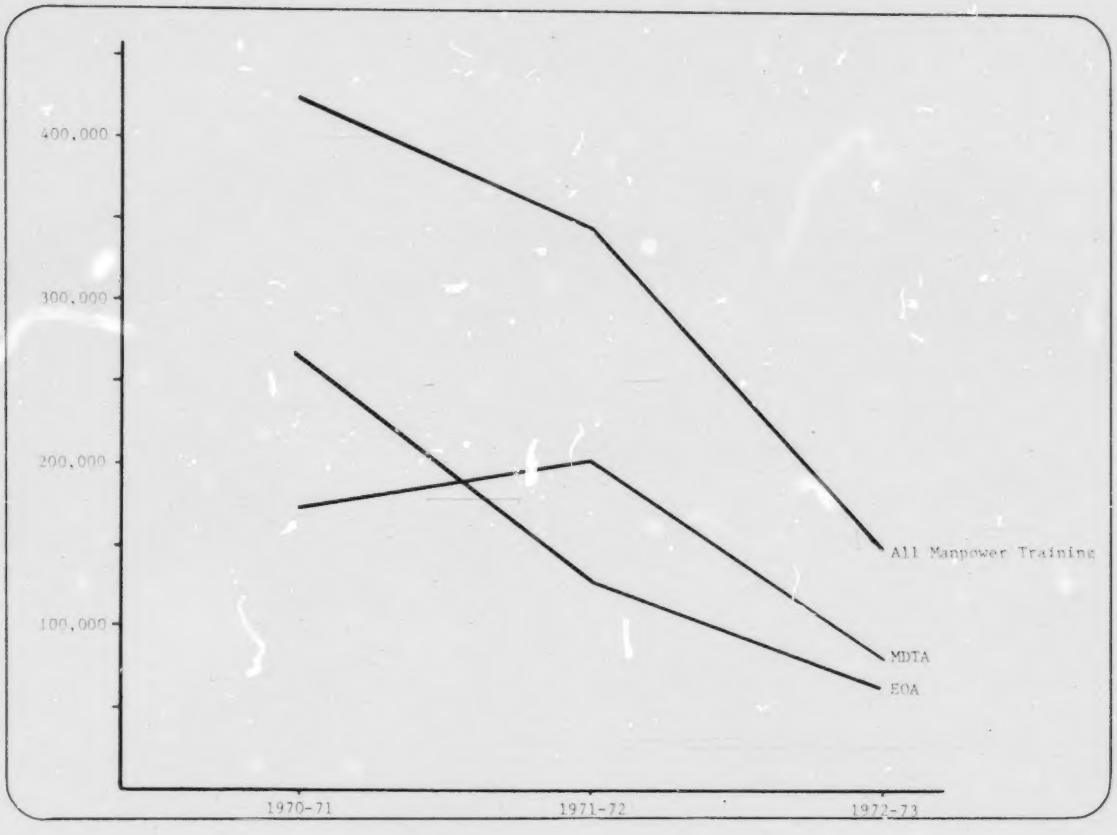
11. Approximately eighty percent of the total expenditures for Vocational Education in 1972-73 were for instructional costs. More than three-fourths of this amount went for salaries, the rest for instructional equipment and other related costs. About ten percent of the total expenditures was used for ancillary services, including administration, supervision and evaluation (eight percent of the total); three percent was used for guidance and counseling, and the remaining seven percent was not reported.



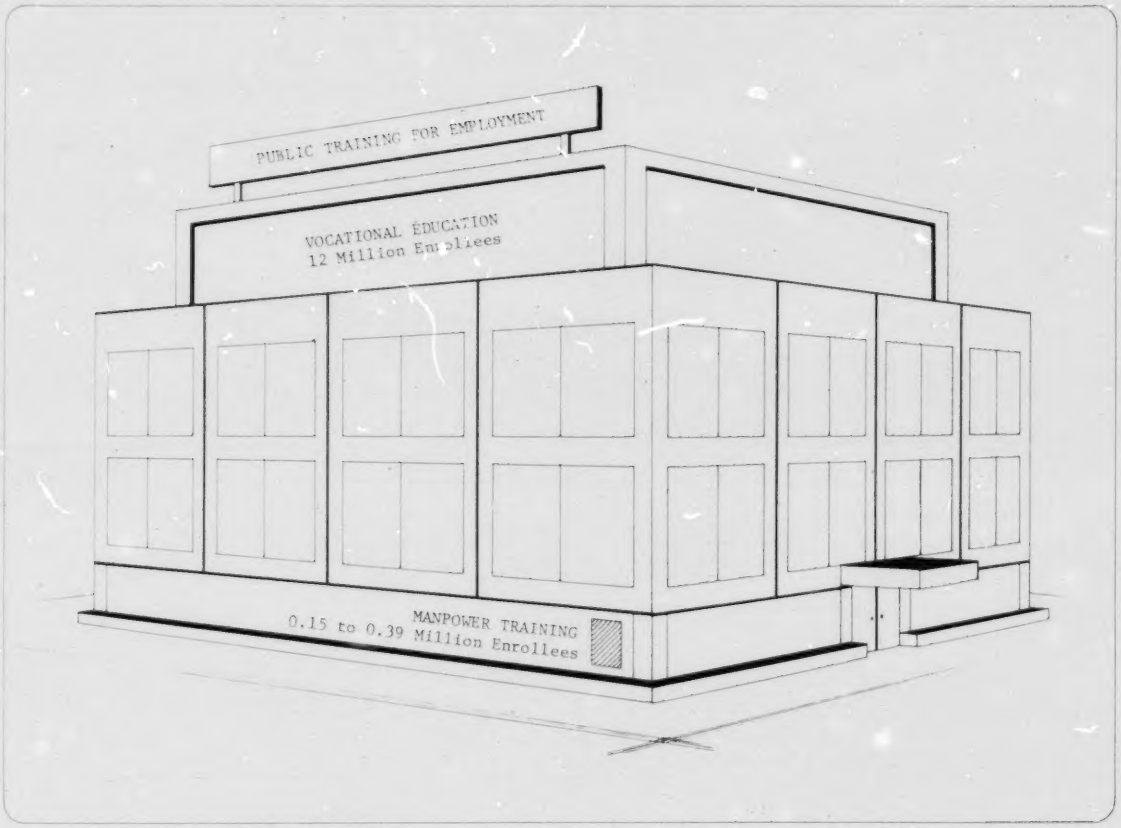
12. The employment rate in the fall of 1973 of Vocational Education students who had completed their programs the preceding year and were available for work was 91.07 percent. Conversely, the unemployment rate was 8.93 percent compared to an unemployment rate of 29.9 percent of all youth in the Nation's labor force in the 16-19 year age group and 16.4 percent of those in the 20-24 year age group.



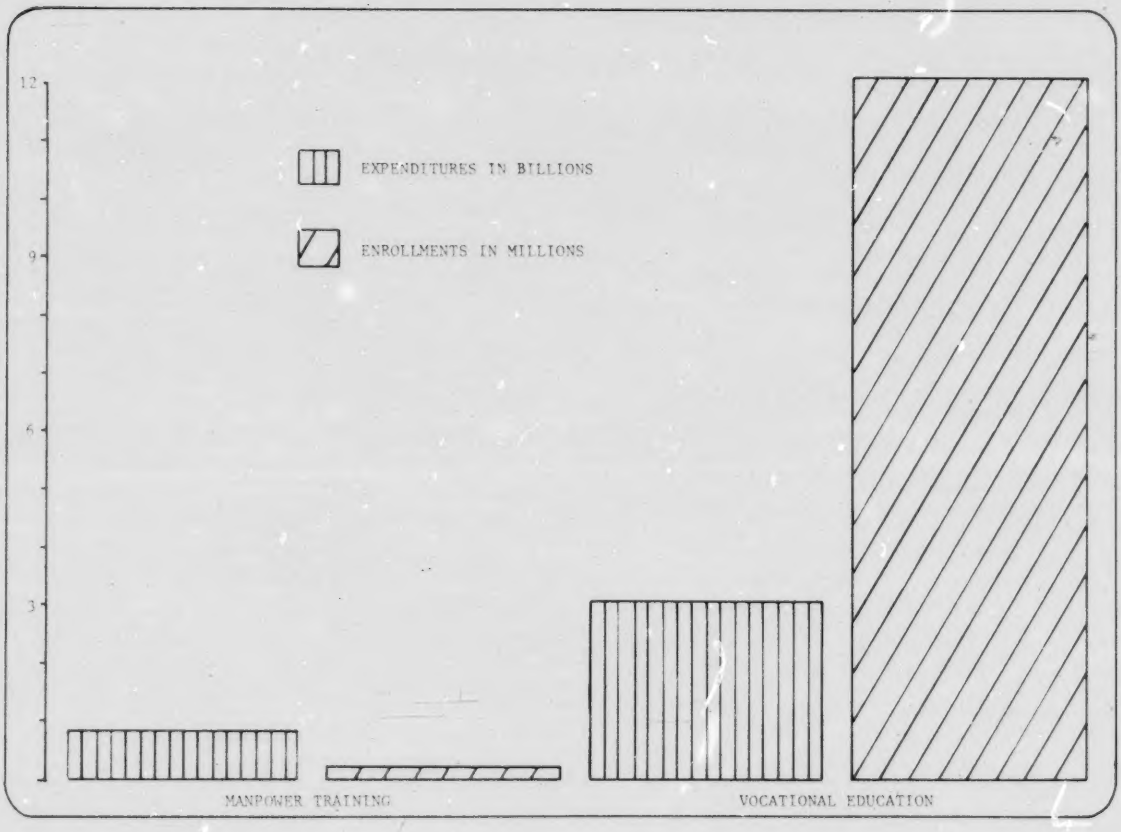
13. The number of manpower trainees who could be identified by the U.S. Department of Labor by State and by occupational program dropped sharply in 1972-73. The decrease, accounted for by delayed Federal funding and a declining interest in programs which were expected to be phased out when the new Comprehensive Employment Training Act went into effect, was evident in programs of both MDTA and EOA.



14. Manpower trainees represented a very small percentage of the combined enrollment of Vocational Education and manpower training in 1972-73. The U.S. Department of Labor reports a higher number than were identified for Project Baseline, including some persons assisted but not trained. Depending on which figure is used, it was either one percent or three percent of the total. In any case, it was considerably lower than the year before.



15. The cost of training approximately 150,000 persons in the manpower programs in FY 1973 was about one-fourth the total Federal, State, and local cost of training eighty times as many students in Vocational Education. Federal allocations for manpower training were $793,804,000. Total Federal, State, and local expenditures, with local expenditures adjusted higher to account for underreporting, were $3,161,598,275. Manpower training costs include support services as well as training.



## Federal and State Reporting

16. The U.S. Department of Labor's previous information system for manpower training is being dismantled as the new Comprehensive Employment Training Act goes into effect, with apparently nothing to take its place except summary data from the prime sponsors. Provisions in the new law would make a good information system possible, but the initial decision by the U.S. Department of Labor seems to be to avoid collecting detailed data above the level of local sponsor. Uniform data are not expected to be available at all. Records on the numbers and kinds of persons served, services provided, costs, and results will be kept in whatever manner the local sponsors decide. Past experience indicates that information of this kind reaching the National level for summarization would be largely unreliable. Analysis of these data at the National level would be quite impossible.

17. Federal reporting requirements of Vocational Education, which greatly influence what the States collect from local schools, were seriously weakened in 1972-73. The U.S. Office of Education dropped its requirement to report ethnic and sex information, to report vocational students below grade nine and in grades nine through twelve separately, and to report job placement by occupation. Many States say they still collect this information, but very few can make it available. As a result, Nationally and in most of the States it is no longer possible to know how many students enrolled in Vocational Education are Negroes, Spanish-surnamed Americans, American Indians, or Orientals. The ratio of males to females is not known. And, without knowing the occupations in which students are being placed, it is impossible to make any meaningful National assessment of the impact of Vocational Education either on the employment market or in relation to specific occupations.

18. There is considerable disagreement among the States in their definitions of Vocational Education, and therefore of the programs, students, and expenditures being reported. Thirty or more States agree on four criteria: Job entry skills must be provided; instructors must be certificated and have work experience in the field taught; the program must be based on employment demand; and, there must be a business/industry/labor/community advisory council.

There is virtually no agreement in definitions of post-secondary Vocational Education, even less of adult Vocational Education, and none whatever of students who have completed Vocational Education programs. Most States leave to the teachers the definitions of a student who leaves a program early with marketable skills, and of a student who is employed in a field related to that in which training was provided.

19. The technology and probably the resources are available to provide within a relatively short time a complete data base of information about Vocational Education and manpower training. Only political and administrative decisions remain. It would be as accurate and current as the administrative records in local educational institutions and training agencies where the data originate. Storage of data at every level -- local, State, and Federal -- would be by separate data elements, not by local or State totals. Thirty-eight data elements covering instructional programs and finance, students, and professional staff are sufficient to provide virtually all of the information needed by administrative and legislative agencies. Retrieval would be possible in aggregates of any of the data elements -- separately and in combinations -- at each level up to and including the Federal Government. Student identification would never leave the States, only statistical data files.

## Policy Implications

The first five findings in the preceding section reveal much that is known about numbers of persons enrolled in Vocational Education. There is also much that is not known, a fault of Federal and State information systems which will be discussed later. Of that which is known, the findings here and the data on which they are based suggest several conclusions with implications for both present policy and future policy considerations.

One of these is that Vocational Education was still expanding in 1972-73, not merely in total numbers but in proportion to the rest of the population. It was expanding at the secondary level in proportion to the total school enrollment. It was probably expanding at the post-secondary level also in proportion to the total enrollment, although reliable data to confirm this are not available. At the adult level Vocational Education was expanding at a rate substantially greater than in proportion to the population.

Coupled with continued growth is another conclusion which may have even more important policy implications. This is the unevenness of the growth taking place. In the measurement of States' Vocational Education enrollments per 1,000 population, there was very little indication of movement toward National equity over a three-year period. Four States had Vocational Education enrollments of fewer than thirty per 1,000 population in 1972-73, four had more than ninety, and the others ranged between the extremes. The rates of growth varied from several hundred percent gain to losses of more than ten percent. And as often as not, high or low growth rates were associated with already high or low enrollments per 1,000 population. As a result, a rather wide disparity was maintained between the opportunity those who needed Vocational Education apparently had -- or availed themselves of -- in one State as compared with another.

There may have been a similar disparity between the opportunity students of one age group had or availed themselves of as compared to

students of another age group. Nationally, within the past decade the annual growth rate had fluctuated from less than ten percent to more than eighty and almost back to ten.

This leads to a third conclusion about enrollment growth which has policy implications -- enrollment did continue to grow in 1972-73, but the rate of growth dropped to its lowest point since 1962-63. Apparently Vocational Education expansion, which was a major purpose of the Act of 1963, was running out of steam. It was doing so in such a way that those who might have needed it appear to have lacked equal opportunities to receive its benefits. The accident of birth, either geographically or in point of time, was becoming an increasingly important factor in who might be served by Vocational Education and who might not.

In respect to continued growth alone, public policy at every level -- Federal, State, and local -- had not changed. It was based on a joint effort to extend Vocational Education opportunities to more people. The data over a three-year period, on the other hand, indicate -- unless enrollments were reaching a saturation point -- that Vocational Education policy in practice was to restrict enrollment growth. In many cases, notably at the Federal level and in a number of States, fiscal policy may have been the dominant factor. This will be discussed in more detail shortly.

In the local school districts and perhaps to some extent in State Vocational Education agencies, public information policies may have been another important reason for declining growth rates. These affect the image of Vocational Education, outreach, and the ability to convince students and parents of the advantages in a vocational program. Also involved quite often, are school guidance and counseling policies which contribute not only to the neglect of public information about Vocational Education but to the restriction of its growth as well.

Public information policies, including guidance and counseling, are merely part of an over-all educational policy in the United States which is basically in conflict with the growth of Vocational Education. A college degree is still the most important objective in the American educational system. Curriculum requirements, accreditation, class scheduling, and student achievement records are all heavily oriented toward this goal.

Findings of the research on expenditures also have extensive policy implications. Wherever discretion is exercized, especially at the Federal and State levels, in developing annual budgets, making appropriations, and allocating funds appropriated, the decisions on which such actions are based are major policy decisions affecting Vocational Education.

Fiscal policy in general at the Federal level and in most States for the past several years has been to limit spending as much as possible. This is understandable, brought on by many years of increasingly higher spending levels by nearly all public agencies, Federal, State, and local. It also multiplies the impact of other fiscal policy decisions.

The Federal Government appears to have decided since Fiscal year 1972

to maintain support for Vocational Education at a constant level or with only slight annual increases. There are three serious policy implications in this decision which the Baseline research findings reveal. The first is that, due to inflation, constant support in terms of the same number of dollars has meant decreasing support in terms of purchasing power. The seriousness of the policy in practice here is that actual support provided in 1972-73 was only a little more than half as much as it would have been in 1963 dollars. Not only were the support levels authorized by the Vocational Education Act of 1963 and the Amendments of 1968 never reached, but the support policy in these legislative measures has in effect been largely ignored.

The second implication in the Federal Government's decision to maintain dollar support at an almost constant level is that even without inflation it represented a policy of freezing Vocational Education expansion. That this has not happened is due entirely to the increased effort by State and local schools to direct more of their own resources into the support of Vocational Education. As far as the Federal Government was concerned, it meant an actual as well as de facto suspension of the policy decisions written into the 1968 and 1963 legislation.

The third implication is that spending priorities within the tight annual appropriations would also remain largely frozen. The Federal Administration and Congress have known, at least since the first Baseline Report, that there is considerable overlapping and duplication between Vocational Education and manpower training programs in their use of financial resources.[2] They have known that more than ninety percent of the total number of youth and adults being prepared for jobs in these two Federally supported programs are Vocational Education students.

They have known that it costs far more, both in Federal dollars and total expenditures, to provide training in manpower programs than in Vocational Education. And they have had the recommendation of the National Advisory Council on Vocational Education since 1969 that, "The Federal Government should invest at least as much money in reducing the flow of untrained youth as it invests in reducing the pool of unemployed."[3]

The decision virtually to freeze spending priorities in the face of the information noted and the Advisory Council's recommendation implies a policy of predetermined priorities. It is a policy fixed at an earlier date before tight money budgets and appropriations were as significant as they have since become. It is based inevitably on the absence of any serious attempt to re-examine spending priorities when the circumstances on which they were initially based may have changed considerably.

The policy implications in research findings about Federal and State reporting may not be as apparent as in the case of enrollments and finance, but they can have far-reaching effects. A good case in point is the U.S.

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[2] Learning A Living Across the Nation, Vol. I, First National Report, Project Baseline, Northern Arizona University, November 1973, pp. 410-413.

[3] Second Report, National Advisory Council on Vocational Education, Washington, D.C., November 15, 1969, p. 3.

Department of Labor's decision to abandon central reporting of the manpower programs under CETA altogether and depend on prime sponsors' summaries for information. There is no reason to believe that summary data from prime sponsors will be inaccurate, but such data are by their very nature incomplete. They are also inclined to reflect program accomplishments the way those responsible for the programs want them reported.

Another example is the policy decision in USOE to drop State reporting requirements of sex and ethnic enrollments, and job placement by occupational code. It deprives USOE, Congress, and the public of information of considerable value. Moreover, because State data collection is so closely bound to Federal reporting it has had the effect also of making this information unavailable to most State Vocational Education agencies, State legislatures, and local school districts.

This is only the latest example of a Federal information system collecting inadequate data to meet the needs for which it supposedly exists. Both of the two previous reports in the Baseline series have discussed other examples in some detail. The result is that most of the policy decisions affecting Vocational Education at the Federal level, and in most of the States, are made to some extent blindly.

It is not known today if there really were twelve million Vocational Education students enrolled in 1972-73 at a total cost of just over three billion dollars. Since the definition of Vocational Education varies from State to State, the figures would inevitably change if a Nationally standardized definition were used. The actual figures may have been higher, probably were. If so, were they increasing, decreasing, or remaining the same from 1970-71 through 1972-73?

The figures reported may be reasonably reliable for what they show -- enrollments and expenditures based on fifty-two different sets of criteria; one for each of the States, the District of Columbia, and Puerto Rico. The criteria used in each State have probably not changed to any great extent during the three years, so the data can be used for annual comparisons. They are by no means valueless. But would the patterns revealed by these figures be different if a Nationally standardized set of criteria were used and all local school districts reported accordingly?

The most important policy implication in Project Baseline's research findings about Federal and State reporting, however, is not that present policies are providing inadequate and perhaps misleading information. It is that the same inertia seems to be evident here, as far as a serious re-examination of these policies is concerned, as is evident in the case of Vocational Education expansion and Federal support. It is most noticeable at the Federal level, less so but still much in evidence in a great many States. Actual policy in the Federal Administration seems to be in the opposite direction from more adequate information.

In the second and third years of Project Baseline's research, a considerable amount of investigation has been made of National reporting techniques based on developments in approximately half of the States using computer technology. The most important feature in these State information systems is the use of non-aggregate rather than aggregate data.

Stated another way, the traditional method of collecting educational data is for the local schools to supply certain totals to their State agencies such as enrollments by program, Federal expenditures, etc. The States in turn add their school totals together, and the U.S. Office of Education adds all of the State totals together. These are aggregate data at each level. For the past five or six years an increasing number of States have asked the schools for individual student information instead of total figures. These are keypunched or optically scanned for storage by computer, and the State agencies then make their own totals. The States in this case are using non-aggregate data. Project Baseline has used the same non-aggregate data from a number of States and several school districts in an experiment to test the methodology at the National level.

Project Baseline's research has shown that the technology is sound, and, while there are a number of problems involved in implementing such a system Nationally, there are at least three very important advantages to be gained. These are that the data are much more accurate, that they are transmitted from the local schools to the States and from the States to the Federal Government much more rapidly, and that they are capable of supplying vastly more information through the great many ways data elements can be combined for tabulation and analysis. (Student identification never reaches the Federal level, only the statistical data about each.)

The policy implications in the knowledge thus gained are extensive. A data base for Vocational Education, and also for manpower training, using this technology needs only cost information and structuring in order to be implemented. From what is known now, most if not all of the limitations of present Federal and State reporting could be overcome with a system of this kind as soon as the problems which stand in its way are solved and the decisions made to use it.

## Recommendations

In its first two reports Project Baseline included a number of recommendations for administrative and legislative consideration affecting Vocational Education and manpower training. Many of those appearing in the first report were repeated in the second. In the present report there is no repetition of previous recommendations, but this does not mean they have lost their importance. On the contrary, those recommendations are just as valid as when they were first made. In some cases they are even more urgent than they were.

The recommendations below are based entirely on the preceding section of this chapter, "Policy Implications", which in turn are based on the significant findings at the beginning of the chapter. The significant findings are based on data in Chapters II, III, and IV. These chapters contain references to specific tables and sections in Part 2, where all of the detailed results of the third year's research may be found. Thus the recommendations have evolved out of a sifting and selecting process.

1. The new Federal legislation scheduled for 1975 should contain provisions which make it possible, and even mandatory, for States to equalize Vocational Education opportunities for all youth and adults.

At present, opportunities seem to vary considerably from State to State and to some extent from age group to age group. It is highly possible that within many States the opportunity for training in different occupational programs is far from equal for students in different schools. Neither the Federal Government nor most of the States have any way of knowing at the present time how many students enrolled in secondary and post-secondary institutions have access to specific Vocational Education programs. It is no longer possible for the Federal Government and most States even to know how many students of one sex or the other, or members of one ethnic minority or another, are enrolled in Vocational Education programs. It has never been possible except in a small minority of States to know in which programs students of one sex or the other, one ethnic group or another, disadvantaged students, and handicapped students are enrolled.

It is admittedly difficult if not impossible to legislate equal opportunity, which is a goal rarely obtainable. Nevertheless, the data suggest not only a situation of perhaps glaring proportions but one which seems to show little or no improvement during the period covered by this research. It is also a situation which should lend itself -- to some extent at least -- to legislative improvement through variations and adjustments in Federal support.

2. The Federal Government should re-examine its spending priorities within total budget limitations as these affect Vocational Education, manpower training, unemployment, and welfare.

Presumably this is what the new Budget Committees of Congress are intended to do. In the face of three years of all of the data available from the States, from the U.S. Office of Education, and from the U.S.D.L. Manpower Administration, Federal expenditures in these four areas are inextricably woven together in a fabric that seems not to make sense. It is a situation so unrelieved by supporting evidence or logic, so universally criticized, and apparently so productive of waste and inefficiency as well as frustration for those in Congress and all of the agencies who have to struggle with it, that not only the Budget Committees of Congress but the Administration also should begin such a re-examination immediately.

Previous reports by Project Baseline have recommended changes in the imbalance of spending between Vocational Education and manpower training in view of the results being realized in training alone. It has also been recognized that much of the cost of manpower training is in support services, which duplicate or replace similar services under welfare programs. Perhaps all of these costs are justified, but to identify them as training costs is a distortion and a disservice to the public.

The Project Baseline staff believes on the basis of three years' research that a much larger proportion of funds appropriated by Congress for training youth and adults for employment should go for Vocational

Education than for manpower training. This is not to say that the actual support funds going to manpower trainees should be reduced; they should simply be properly identified as welfare. It does mean, on the other hand, that the Federal appropriations for Vocational Education should be substantially increased.

The total budget for Vocational Education, manpower training, combating unemployment, and welfare may not need to be increased. Conceivably it could be reduced if, in the re-examination of priorities, sufficient duplication and overlapping of expenditures for the same purposes could be identified.

On the other hand, if Congress and the Administration should find that an increase in this combined section of the Federal budget is in the public interest, such an action could then be taken on the basis of a clearly understood policy decision, balanced perhaps by a corresponding reduction elsewhere.

The case for substantially increased Federal appropriations for Vocational Education rests entirely on the conclusions from the research findings in this report: (1) Inflation has already eroded a substantial amount of the purchasing power of the support now being appropriated; (2) Public policies written into the 1963 and 1968 Vocational Education legislation have in effect been suspended under a fiscal policy of holding Federal appropriations each year to a nearly constant level; and (3) Vocational Education needs this kind of shot in the arm again, as it did in 1963 and 1968, to meet adequately the needs of youth and adults for employment preparation.

3. Congress should include in the new Federal legislation scheduled for 1975 a set of Vocational Education definitions based on criteria which permit the States and local school districts all of the flexibility possible for programs designed to suit their own needs, while at the same time providing for National standardization of terminology.

The need for National standardization is shown to be of the greatest magnitude in reporting enrollments and expenditures. The need is not only for better information, but for better accountability. When public funds are used in substantial amounts to support a particular activity like Vocational Education, it is extremely difficult to account for the expenditure of those funds when fifty-two different sets of criteria are used to identify the product.

The same is true of categories within Vocational Education. If these categories are not eliminated entirely -- and there is at least some doubt that they will be -- they sould be clearly identified. The failure to do so in previous legislation has resulted in considerable confusion and misunderstanding in the allocation of funds for the disadvantaged, handicapped, and post-secondary programs.

On the basis of three years of data collection and research in data collection procedures in each State, the Project Baseline staff suggests the following definitions:

Vocational Education Course: Any course of any length above grade six in a public or private educational institution taught by a certificated instructor who has had work experience in the field or fields being taught, based on reliable projections of employment demand, and which uses a business/industry/labor/community advisory council. Such courses must be designated as either exploratory, preparatory, or supplemental, and be conducted under a prescribed set of minimum performance standards approved by the local school district or by the State or both. Performance standards shall be capable of being met either by normal completion of a fixed time schedule, or by examination, depending on local school policy. For reporting purposes, the total number of clock hours normally required for each course shall be included in both student enrollment and expenditure data.

Vocational Education Program: One or more vocational or related courses in a prescribed sequence leading to a specific kind and level of job entry skills depending on State or local school district policy or both.

Exploratory Vocational Education: Courses usually, but not necessarily, below grade eleven, in which students are given an introduction to employment skills in one or more occupational areas for career and interest exploration only, not for employment.

Preparatory Vocational Education: Courses usually, but not necessarily, above grade ten in which students are given basic and/or advanced preparation for employment at a higher educational level.

Supplementary Vocational Education: Courses at any level specifically for adults and youth out of school in which students are given basic and/or advanced preparation for employment.

Pre-secondary Vocational Education: Exploratory courses in grades 7-8.

Secondary Vocational Education: Exploratory or preparatory courses in grades 9-12.

Post-secondary Vocational Education: Preparatory courses in grades 13-14.

Adult Vocational Education: (This term is eliminated under the definition of Supplementary Vocational Education.)

Vocational Education Completions: All students who meet the minimum standards established by the local school district or the State or both in any Vocational Education course and who complete either a prescribed Vocational Education program or one designated by the local school district or the State or both as providing job entry skills.

Early Leavers with Marketable Skills: (This term is eliminated under the definition of completions.)

Disadvantaged Vocational Education Students: All students enrolled in any Vocational Education course who meet the criteria for disadvantaged under Title I of the Education Act of 1965 as amended.

Handicapped Vocational Education Students: All students enrolled in any Vocational Education course who meet the criteria for handicapped under Title I of the Education Act of 1965 as amended.

4. A new reporting system should be established for both Vocational Education and manpower training in which essential non-aggregate data elements in machine readable form are transmitted from the local school districts and prime sponsors to the appropriate State agencies, and by these to a designated agency of the Federal Government for tabulation and analysis by computer at each level.

All of the results of Project Baseline research in State and Federal reporting have led to a single conclusion: The technology being used in most cases is so far out of date that accuracy, timeliness, and utilization of the information provided are grossly impaired. In far too many cases the technical personnel whose responsibility it is to collect and transmit data seem not even aware of methods and technology more advanced than those developed for the first generation computers of the 1950s. Administrators are almost totally dependent for their knowledge of the technology available on their own data processing technical personnel, many of whom seem not to have kept up with the state of the art.

Many highly skilled technical personnel, especially those who have maintained close relationships with the rest of the industry and its constantly emerging new products, are available to assist in developing a far more effective and efficient information system for Vocational Education and manpower training. Project Baseline has used some of the knowledge and assistance available from such persons in an experimental system, the results of which are now available to the Federal Government.

## II. THREE YEARS OF VOCATIONAL EDUCATION, 1971-73

### Enrollment

Did Vocational Education continue to expand in 1972-73 as it had in previous years?

Part 2 Tables 1, 46-49

Total enrollment increased, but the rate of growth slowed down considerably. There were 12,064,761 students enrolled altogether, the largest number ever reported. This was a growth of 4.10 percent. The year before the growth rate had been 10.54 percent. The year before that it had been 19.23 percent.

At the secondary level in 1972-73 the growth rate was 1.74 percent, down from 11.33 percent the preceding year. In post-secondary programs it was 3.56 percent, compared to 14.28 percent the preceding year. Only in adult programs did the growth rate increase -- from 7.23 to 9.88 percent.

| | Enrollment | | Annual Growth Rate | |
|---|---|---|---|---|
| | 1971-72 | 1972-73 | 1971-72 | 1972-73 |
| Secondary | 7,222,867 | 7,348,666 | 11.33% | 1.74% |
| Post-secondary | 1,303,052 | 1,349,465 | 14.28% | 3.56% |
| Adult | 3,064,030 | 3,366,630 | 7.23% | 9.88% |
| Total | 11,589,949 | 12,064,761 | 10.54% | 4.10% |

It would appear that either Vocational Education was running low on resources for continued expansion or the acceleration of interest in secondary and post-secondary Vocational Education was slowing down. Conceivably, both were happening. A comparison of the annual rates of increase of total expenditures and total enrollments (see pages 39 and 40) suggests this possibility.

Did either the growth or the declining rate of growth of Vocational Education in 1972-73 appear as a general situation throughout the U.S. or did enrollment accelerate in some States while dropping off in others?

Part 2 Tables 3, 50

Vocational Education enrollments per 1,000 population increased in thirty-eight States and the District of Columbia, and decreased in the other twelve States. The rate of growth increased in twenty-one States and the District of Columia, and declined or fell below zero in twenty-nine States.

| | | Regions | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | I | II | III | IV | V | VI | VII | VIII | IX | X | Total |
| No. of States in which enrollment/1000 population | • Increased by more than 10 students | 1 | | 1 | 1 | 2 | | | | 1 | 1 | 7 |
| | • Increased up to 10 students | 5 | 2 | 4 | 7 | 2 | 4 | 2 | 3 | 1 | 2 | 32 |
| | • Decreased | | | 1 | | 2 | 1 | 2 | 3 | 2 | 1 | 12 |

| | | Regions | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | I | II | III | IV | V | VI | VII | VIII | IX | X | Total |
| No. of States in which percent of change in enrollment/1000 population | • Increased by more than 10 percentage points | 2 | | 2 | 1 | 1 | | 1 | 1 | 2 | | 10 |
| | • Increased up to 10 percentage points | 1 | 1 | | 3 | | 4 | 1 | 1 | | 1 | 12 |
| | • Decreased up to 10 percentage points | | 1 | 3 | 3 | 2 | 1 | | | 2 | 1 | 13 |
| | • Decreased by more than 10 percentage points | 3 | | 1 | 1 | 3 | | 2 | 4 | | 2 | 16 |

| | | Regions | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | I | II | III | IV | V | VI | VII | VIII | IX | X | Total |
| No. of States in which enrollment/1000 population | • Was above the Nat'l. figure by more than 10 students | | | 2 | 3 | 2 | | | 1 | | 2 | 10 |
| | • Was above the Nat'l. figure by up to 10 students | 1 | | 1 | | 1 | 3 | | 1 | 3 | 1 | 11 |
| | • Was below the Nat'l. figure by up to 10 students | 1 | 2 | 1 | 3 | 1 | 1 | 2 | 1 | 1 | 1 | 14 |
| | • Was below the Nat'l. figure by more than 10 students | 4 | | 2 | 2 | 2 | 1 | 2 | 3 | | | 16 |

There seems to have been no apparent relationship between increases and decreases in the enrollment of Vocational Education students per 1,000 population on the one hand and increases or decreases in the growth rate. Nor is a relationship evident between either of these and the number of enrollments per 1,000 population compared to the National average. Variations from the preceding year were extreme for some States in each case, but rarely for the same States and often in different directions. Thus, while a few States showed a very substantial growth in enrollments per 1,000 population and also a fairly high rate of growth, others showed sizeable increases in growth and sharp reductions in rate of growth. Moreover, some States with the highest number of enrollments per 1,000 population had continued growth rates much higher than the National average, and others did not. The same was true of States with the lowest number of enrollments per 1,000 population.

Both actual enrollments in Vocational Education in proportion to the population and the extent of increase or decrease thus continued to fluctuate among the States as they had in previous years. In spite of the erratic nature of these fluctuations in many cases, the National pattern seems not to have changed a great deal. Individual States ranged from 21.75 (Missouri) to 103.28 (North Carolina) enrollments per 1,000 population. The low figure in Missouri was due principally to problems with a new reporting system, but there were three others with

fewer than thirty Vocational Education students per 1,000 population (Indiana, 29.60; Pennsylvania, 29.94; Rhode Island 25.86). And, three other States had enrollments of more than 90 per 1,000 population (Florida, 92.34; Illinois, 97.06; Utah, 91.63). In three of the four low States the enrollment per 1,000 population had been lower three years before, and in each of the four high States the enrollment per 1,000 population had been substantially higher than the National average three years earlier.

Most States, in fact, did not change in 1972-73 by more than five vocational students per 1,000 population. Usually, where the figure had been high the year before it remained high, and States with relatively low enrollments in Vocational Education in relation to the population tended to remain low.

This pattern is evident over the three-year period 1970-71 through 1972-73, as seen when the States (including the District of Columbia) are divided roughly into four quarters based on their relative Vocational Education enrollments per 1,000 population. Thirty-three States were in the same quarter as at the beginning. Eight States moved to higher quarters, and ten moved down. Eight of the thirteen States in the top quarter in 1970-71 were still in the top quarter in 1972-73. Eleven out of twelve in the bottom quarter were still there three years later. One State dropped from the top quarter to the bottom and another from the top to the next-to-bottom quarter. Another went from the next-to-lowest quarter to the top. But these were States with small populations where changes in total enrollment would tend to produce more noticeable changes in enrollment per 1,000 population.

The National trend seemed to be that the status quo was maintained among the States while the enrollment per 1,000 population increased at a decelerating rate. Expressed another way, more youth and adults in proportion to the population either had the opportunity or took advantage of it to enroll in Vocational Education in some States than in others, and this situation did not change in most of the United States from 1970-71 to 1972-73.

Was the declining rate of growth in Vocational Education more pronounced in some occupational areas than in others?

Part 2 Tables 2, 57-72

The rates of growth in agriculture, consumer and homemaking, occupational home economics, and trade and industrial education all slowed down from the preceding year. Health occupations, distributive education, office occupations, and technical education showed an increase in their rates of growth. Actual enrollment increased in every case, but in consumer and homemaking the rate of growth was approaching zero.

| | Enrollment | | Percent of Change | |
|---|---|---|---|---|
| | 1971-72 | 1972-73 | 1971-72 | 1972-73 |
| Agriculture | 895,866 | 927,141 | 6.08% | 3.49% |
| Dist. Education | 640,122 | 738,449 | 10.74% | 15.36% |
| Health | 336,611 | 421,008 | 24.90% | 25.07% |

| | Enrollment | | Percent of Change | |
|---|---|---|---|---|
| | 1971-72 | 1972-73 | 1971-72 | 1972-73 |
| Cons. & Homemaking | 3,162,732 | 3,186,476 | 7.96% | 0.75% |
| Occ. Home Economics | 279,118 | 322,696 | [illegible]1.82% | 15.61% |
| Office Occupations | 2,349,977 | 2,497,558 | [illegible].62% | 6.28% |
| Technical Ed. | 336,639 | 363,909 | 7.32% | 8.10% |
| Trade & Industry | 2,394,334 | 2,695,726 | 15.53% | 12.59% |

The highest growth rate was in health occupations, which at 25.07 percent was barely up from the rate the year before. Occupational home economics had the next highest growth rate, 15.61 percent which represented a drop of more than twenty-six percentage points from the preceding year. Distributive education was third at 15.36 percent, up from the year before by almost five percentage points. What this suggests is that a great deal of movement in the occupational structure of Vocational Education was taking place. The shifting strength of occupational enrollments may have represented shifting demands in the employment market, shifting emphasis and support funds, shifting interest on the part of students, or all of these.

Part 2
Tables
10, 11,
79, 80

What happened to the cooperative education and work study programs in view of Vocational Education's declining growth rate?

Virtually the same percentages of students continued to enroll in these programs in 1972-73 as in each of the two preceding years. Cooperative education enrollments increased from 4.96 percent of the total secondary and post-secondary enrollment in 1970-71 to 5.27 percent in 1971-72, and 5.73 percent in 1972-73. Work study percentages, like cooperative education, changed slightly from State to State, but remained very nearly the same Nationally for all three years at 0.37 to 0.39 percent of the secondary and post-secondary enrollment. These programs apparently have remained stabilized at relatively low levels since the initial effect of the 1968 Amendments.

Part 2
Table 33

What occupational areas had the highest proportionate enrollment in cooperative education programs?

Distributive education, trade and industrial education, and office occupations accounted for more than seventy-five percent of all cooperative education enrollments.

| | Total Cooperative Enrollment | Percent of Total |
|---|---|---|
| Agriculture | 30,442 | 6.10% |
| Distributive Ed. | 169,529 | 33.95% |
| Health | 21,014 | 4.21% |
| Occ. Home Economics | 27,565 | 5.52% |
| Office Occupations | 103,732 | 20.77% |
| Technical Education | 7,494 | 1.50% |
| Trade & Industrial | 113,896 | 22.81% |
| Consumer & Homemaking | 4,910 | 0.98% |
| Other | 20,740 | 4.15% |

Distributive education may have developed the cooperative program to a greater extent than other occupational areas because of the large number of businesses and their presence in every community. The same is true to a lesser extent of many of the trade and industrial fields, and of office occupations. This would suggest that vocational educators have followed paths of least resistance in their development of cooperative programs. While recognized as a highly valuable learning technique, its neglect appears evident. One reason for that neglect may be the absence of strong motivation or adequate resources to go beyond the relatively easy stage of setting up Vocational Education cooperative programs where employers are already receptive to the idea of employing students.

Was membership in vocational youth organizations affected by the declining growth rate of Vocational Education?

Part 2
Table 34

Simply on the basis of the declining growth rate in enrollments, it may be assumed that membership in vocational youth organizations did not grow as rapidly as in previous years, but data are not available to confirm this assumption. Project Baseline reported an estimated two million student members in 1971-72, based on data from twenty-three States. In 1972-73 the reported or estimated membership in the National vocational youth organizations in forty-five States and Puerto Rico was 1,248,442. This suggests that the previous estimate was too high, or membership growth in 1972-73 was quite limited, or both.

Only nine States have comparable data for both years, and they indicate a small growth of approximately five percent.

| | TOTAL | | FFA | | FHA | | DECA | | FBLA | | VICA | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1971-72 | 1972-73 | 1971-72 | 1972-73 | 1971-72 | 1972-73 | 1971-72 | 1972-73 | 1971-72 | 1972-73 | 1971-72 | 1972-73 |
| Arkansas | 40,896 | 43,012 | 14,486 | 14,107 | 19,581 | 19,550 | 1,267 | 1,520 | 4,085 | 5,479 | 1,477 | 2,356 |
| Florida | 33,208 | 36,490 | 12,000 | 13,300 | 10,000 | 10,000 | 4,781 | 5,519 | 4,000 | 4,700 | 2,427 | 2,971 |
| Kentucky | 45,133 | 45,943 | 14,434 | 14,858 | 16,341 | 15,938 | 3,985 | 3,519 | 4,643 | 5,564 | 5,730 | 6,064 |
| Nebraska | 13,157 | 14,047 | 5,506 | 6,175 | 4,853 | 4,800 | 1,637 | 1,585 | 1,021 | 1,400 | 140 | 87 |
| Nevada | 1,803 | 2,024 | 542 | 560 | 745 | 751 | 275 | 250 | 110 | 323 | 131 | 140 |
| N. Carolina | 64,856 | 64,956 | 21,531 | 21,386 | 21,389 | 19,882 | 7,536 | 8,188 | 4,400 | 4,500 | 10,000 | 11,000 |
| Oregon | 7,743 | 7,994 | 4,561 | 4,423 | 1,597 | 1,270 | 800 | 815 | 350 | 1,100 | 435 | 386 |
| Utah | 9,535 | 12,376 | 3,499 | 4,012 | 4,013 | 4,023 | 1,301 | 1,551 | 210 | 940 | 512 | 1,850 |
| Vermont | 2,024 | 2,378 | 704 | 783 | 583 | 567 | 198 | 237 | 104 | 261 | 435 | 530 |
| TOTAL IN NINE STATES | 218,355 | 229,220 | 77,263 | 79,604 | 79,102 | 76,781 | 21,780 | 23,184 | 18,923 | 24,267 | 21,287 | 25,384 |

Membership in vocational youth organizations often indicates a level of purpose and commitment regarding preparation for careers much higher than for students who merely enroll in classes. It may be a measure to some extent of the intangible qualities of Vocational Education programs such as stimulation and potential student success. Since some National organizations are older than others they tend to be stronger, and this in turn may be a contributing factor to the continuing strength of enrollment in these occupational programs.

Part 2
Table 28

To what extent was the total public school secondary education population in the U.S. enrolled in Vocational Education in 1972-73?

Nearly forty-three percent of the public school students in forty States, the District of Columbia and Puerto Rico in grades nine through twelve were reported enrolled in Vocational Education courses.

| | |
|---|---|
| Total Public School Enrollment Grades 9-12 | 11,376,513 |
| Secondary Vocational Education Enrollment Grades 9-12 | 4,841,532 |
| Percent of Total Secondary Enrollment | 42.6 |

This includes consumer and homemaking education. The figure is almost identical to that for the same States in 1971-72. Before the Vocational Education Act of 1963, this figure was between fifteen and twenty percent. It is true that the Federal legislation did blanket in a substantial number of enrollments already established in several occupational areas, but most of the growth may be attributed to expansion of existing programs and the addition of new ones after the Federal legislation of 1963 and 1968 went into effect.

Part 2
Table 35

To what extent was the total public school secondary education population in the U.S. enrolled in some kind of occupationally related education in 1972-73?

When industrial arts and general business enrollments were added to Vocational Education in seven States, the District of Columbia and Puerto Rico, seventy-five percent of all students in grades 9-12 were enrolled in at least one of these programs.

| | |
|---|---|
| Total Secondary Enrollment in Seven States, District of Columbia and Puerto Rico | 1,177,827 |
| Secondary Students in Vocational Education in Seven States, District of Columbia and Puerto Rico | 485,623 |
| Percent | 41.2 |
| Secondary Students in Industrial Arts in Seven States, District of Columbia and Puerto Rico | 323,288 |
| Percent | 27.4 |

| | |
|---|---|
| Secondary Students in General Business in Seven States, District of Columbia and Puerto Rico | 73,887 |
| Percent | 6.3 |
| Total Unduplicated Enrollment in Vocational Education, Industrial Arts, and General Business in Seven States, District of Columbia and Puerto Rico | 882,709 |
| Percent | 74.9 |

Seven States, the District of Columbia and Puerto Rico are clearly no indication of the National enrollment. However, in each of three years in which data have been collected from different States there has been a great deal of consistency. In 1970-71, seventy-three percent of secondary students were enrolled in one or another of these programs in thirty States. In 1971-72, it was 71.9 percent in fifteen States. In each case the percent of Vocational Education students enrolled in the reporting States has been quite close to the known percent Nationally for all States. There is no way of knowing with present data collection methods in most States how many of these students are receiving merely an introduction to skills in a variety of occupations, but it is known that some of them are receiving actual Vocational Education under another name.[4]

How many elementary, secondary, and post-secondary students were enrolled in some kind of career education program in 1972-73?

Part 2
Table 36

There is no way of answering this question or even arriving at an estimate at the present time. The figure is probably substantial. Career education has no clear definition, but it is generally used in reference to programs of study which combine academic education with preparation for the world of work. Project Baseline has been gathering data about career education programs from the State agencies for three years, and a very considerable amount of development has taken place. An attempt was made for the first time to collect enrollment figures in programs identified as career education for the year 1972-73. Twenty-one States and Puerto Rico were able to supply some information, ranging from merely general estimates to numbers reported by local schools. Even for many of these States the numbers given may be low, because there are career education programs in a great many local schools not supported by special funds and therefore not ordinarily reported.

| | |
|---|---|
| Reported Career Education Enrollments in Fourteen States and Puerto Rico in Grades K-9 | 1,721,937 |
| Reported Career Education Enrollments in Five States in Grades K-12 and One State Grades K-14 | 261,003 |
| Total in Twenty States and Puerto Rico | 1,982,940 |

[4]Learning A Living Across the Nation, Vol. I. First National Report Northern Arizona University, November 1973, p. 48ff.

Obviously these figures are meaningless for several reasons. They are shown here merely to establish the fact that some States can report their career education enrollments, and secondly to suggest the need for all States to do so. Career education cannot remain a viable feature of the educational system without developing measurable data which show the nature and extent of its impact.

## Target Populations

Part 2
Tables
73-77

### What effect if any has the declining growth rate of Vocational Education had on minority groups?

There are some indications that the percent of minority group enrollments in Vocational Education, with the exception of American Indians, declined in 1972-73. Since the U.S. Office of Education has dropped its requirement to report ethnic enrollments in Vocational Education, figures for that year are available from only fifteen States. Some of the other States have these data in their information systems, but without the requirement to pull them out for the Federal reports they have not done so.

| | 1971-72 | 1972-73 |
|---|---|---|
| Negroes as a Percent of Vocational Education Enrollment in 15 States | 17.60 | 15.92 |
| American Indians as a Percent of Vocational Education Enrollment in 15 States | 0.63 | 2.08 |
| Orientals as a Percent of Vocational Education Enrollment in 15 States | 0.35 | 0.21 |
| Spanish-surnamed Americans as a Percent of Vocational Education Enrollment in 15 States | 5.62 | 3.89 |
| Non-minority Students as a Percent of Vocational Education Enrollment in 15 States | 75.66 | 77.90 |

Of the fifteen States, five had roughly the same percentages of ethnic minorities enrolled in Vocational Education in 1972-73 as they had the year before. Most of the others had noticeable variations. It is impossible to draw conclusions from these data, but they do suggest that patterns of ethnic participation may still be changing.

Part 2
Tables 8, 9
54-56

### What happened to the enrollment of disadvantaged and handicapped students as the growth rate of Vocational Education declined?

The enrollment of disadvantaged students in Vocational Education dropped

in 1972-73 from the year before by 1.69 percent. Handicapped enrollment increased by 0.64 percent, but this was a reduced growth rate.

| | 1971-72 | 1972-73 | Percent of Increase or Decrease |
|---|---|---|---|
| Total Disadvantaged Enrollment | 1,608,187 | 1,581,025 | -1.69 |
| Disadvantaged Students as a Percent of Total Vocational Education Enrollment | 13.88 | 13.10 | -0.78 |
| Total Handicapped Enrollment | 221,295 | 222,713 | 0.64 |
| Handicapped Students as a Percent of Total Vocational Education Enrollment | 1.91 | 1.80 | -0.06 |

While some of the drop in disadvantaged enrollments and the decline in growth rate of handicapped enrollments probably was due to the lower growth rate generally, much of it was undoubtedly the result of a new requirement in Federal reporting. Beginning in 1972-73, only those students could be counted who were in special classes. The reasoning apparently is that special support is earmarked for such students in the Federal legislation, and they are identified as students who cannot otherwise succeed in vocational programs. The way to determine who cannot succeed in regular vocational programs is to include only those enrolled in special programs.

<u>At what levels of Vocational Education were most of the disadvantaged and handicapped students enrolled?</u>

Part 2 Tables 8, 9, 29-30

Seventy percent of the disadvantaged and seventy-one percent of the handicapped were enrolled at the secondary level. This was noticeably higher than the percentage of all Vocational Education students at this level.

| Level | Total Voc. Ed. | Disadvantaged | Handicapped |
|---|---|---|---|
| Secondary | 60.91% | 69.80% | 70.66% |
| Post-secondary | 11.19% | 11.68% | 13.52% |
| Adult | 27.90% | 18.52% | 15.82% |

It is a little surprising to find proportionately fewer handicapped and disadvantaged students at the adult level in Vocational Education and proportionately more at the secondary level. One explanation may be the appeal of manpower training programs over Vocational Education to adults with special needs. Both serve the same population, but manpower training programs offer a variety of supporting services which are particularly attractive to the disadvantaged and handicapped.

Part 2
Tables 2,
31, 32

In what occupational areas were most of the disadvantaged and handicapped students being prepared?

Data were available from only fourteen States showing the enrollment of disadvantaged students by occupational area, and from thirteen States showing the enrollment of handicapped students by occupational area. While these figures cannot be considered representative, they do provide indications of what might be revealed by more complete data. The figures from the fourteen States show that consumer and homemaking enrolled substantially more disadvantaged Vocational Education students than any other occupational area. Only one other area, occupational home economics, had a higher percent of disadvantaged students than its percent of the total vocational enrollment. The data from the thirteen States show trade and industrial education enrolled the highest percentage of handicapped students, followed closely by consumer and homemaking. Three other areas had higher percentages of handicapped students than their percentages of total Vocational Education: agriculture; distributive education, and occupational home economics.

| Occupational Area | Total Voc. Ed. | Disadvantaged (14 States) | Handicapped (13 States) |
|---|---|---|---|
| Agriculture | 7.61% | 5.80% | 12.83% |
| Distributive Ed. | 6.06% | 4.69% | 6.48% |
| Health | 3.46% | 2.68% | 2.37% |
| Consumer & Homemaking | 26.15% | 40.56% | 20.36% |
| Occupational HE | 2.65% | 3.33% | 5.44% |
| Office Occupations | 20.50% | 16.23% | 11.03% |
| Technical Ed. | 2.99% | 1.31% | 0.86% |
| Trade & Industrial | 22.13% | 15.83% | 22.40% |
| Other | | 9.57% | 18.24% |

It is not surprising to find so many disadvantaged students in consumer and homemaking, since an effort has been under way for several years to provide a special service through this program for girls from lower income groups. Why there should be a relatively high percent of handicapped students in agriculture is not clear.

Part 2
Table 78

What effect if any did the declining growth rate of Vocational Education have on the enrollment of males and females?

It may have had a slight equalizing effect, but not enough States were able to provide data to know. The U.S. Office of Education has dropped its requirement for reporting male and female students enrolled in Vocational Education, and only nine States were able to provide these data.

| | 1970-71 | 1971-72 | 1972-73 |
|---|---|---|---|
| Percent of Males in Total Vocational Education Enrollment in Nine States | 41.68 | 40.09 | 43.81 |
| Percent of Males in Total Vocational Education in all States | 44.6 | 44.5 | NA |

In the particular States from which data were available the proportion of males to females increased slightly, but it was lower to begin with in these States than it was Nationally. The much slower growth rate of consumer and homemaking enrollment from 1970 to 1973 compared with trade and industrial enrollment suggests that Nationally the proportion of males to females probably did increase. The absence of data from more than nine States is especially regretable in view of an increasing concern about possible sex discrimination in Vocational Education.

## Expenditures

Did Vocational Education expenditures continue to increase in 1972-73 as they had in previous years?

Part 2 Tables 12, 81

Total reported Federal, State and local expenditures for Vocational Education increased by a relatively small amount, as they had in 1971-72.

| | Total Reported Expenditures | Percent of Increase Over Previous Year |
|---|---|---|
| 1970-71 | $2,399,025,018 | 28.55 |
| 1971-72 | 2,654,338,633 | 10.64 |
| 1972-73 | 3,026,027,939 | 14.00 |

The rate of increased spending as reported was probably not much higher than the inflation rate. On the basis of the Consumer Index, inflation did not equal fourteen percent, but on the basis of educational costs it may have been approaching that level.

Has there been a relationship between the annual growth of Vocational Education and annual expenditures?

Part 2 Tables 46, 81 (Data prior to 1971 taken from USOE VE Annual Reports)

Over a ten-year period both expenditures and enrollments have increased at fluctuating annual rates, and the rate in each case has shown a similar pattern. Preceding the 1963 Federal legislation, and again preceding the 1968 Federal legislation, the rates of increase of both expenditures and enrollments were slowing down. The same downward trend appears to be under way again.

| Fiscal Year | Annual Rates of Increase Total Expenditures | Total Enrollments |
|---|---|---|
| 1962 | 11.76% | 5.63% |
| 1963 | 8.79% | 3.55% |
| 1964 | 7.73% | 8.28% |
| 1965 | 81.69% | 18.93% |
| 1966 | 32.29% | 11.77% |
| 1967 | 25.53% | 16.10% |
| 1968 | 18.80% | 6.90% |
| 1969 | 14.75% | 5.91% |
| 1970 | 36.34% | 10.21% |
| 1971 | 28.55% | 19.23% |
| 1972 | 10.64% | 10.54% |
| 1973 | 14.00% | 4.10% |

The growth rate of expenditures has fluctuated at higher levels and to a greater extent than the growth rate of enrollments. This is not surprising. Expenditures cover a variety of start up and supporting costs not directly related to student enrollment. It should also be kept in mind that inflation has reduced the actual purchasing power of expenditures.

Part 2
Tables 12, 18, 46, 81

Has there been a relationship between dollars spent and students enrolled in Vocational Education?

Considering the effects of inflation, there would appear to have been a lower total expenditure in 1972-73 for a slightly higher enrollment, although in fact that may not have been the case. A certain amount of local school expenditures, and in some cases State expenditures, are known to be underreported. Consequently, reliable data on the combined Federal, State and local expenditures are not always available.

In an effort to arrive at somewhat more reliable expenditure data, Project Baseline asked each State to estimate the percent of underreporting by its own local schools. The States were also asked to break out State expenditures from the State and local totals appearing on their Federal report forms. Not all States were able to supply estimates of local underreporting, and in these cases the average of other States was used unless local reporting was stated to be accurate. The results are conservative, but closer to the true picture than those shown by the Federally reported data.

| | |
|---|---|
| Total Reported Local Expenditures | $ 1,201,317,935 |
| Total Local Expenditures Adjusted to Allow for Underreporting | 1,336,888,271 |
| Percent Increase of Adjusted over Reported Local Expenditures | 11.29 |

| | |
|---|---|
| Total Reported State and Local Expenditures | $ 2,546,302,142 |
| Total State and Local Expenditures Adjusted to Allow for Underreporting | 2,681,872,478 |
| Percent Increase of Adjusted over Reported State and Local Expenditures | 5.32 |
| Total Reported Federal, State, and Local Expenditures | 3,026,027,939 |
| Total Federal, State, and Local Expenditures Adjusted to Allow for Underreporting | 3,161,598,275 |
| Percent Increase of Adjusted over Reported Federal, State, and Local Expenditures | 4.48 |

Similar data were not collected for previous years, so it is impossible to know if underreporting increased or decreased or remained essentially the same in 1972-73. Assuming that it was not greatly different, however, and assuming that the information supplied by the States on this question was reasonably reliable, total expenditures would have been nearly five percent higher for Vocational Education each year than reported. While this may be significant in explaining differences in expenditures between States, it does not greatly affect National comparisons of expenditures with enrollment data.

| | Total Voc. Ed. Enrollment | Total Voc. Ed. Expenditures as Reported | Total Voc. Ed. Expenditures Adjusted to Allow for Underreporting |
|---|---|---|---|
| 1970-71 | 10,485,255 | $2,399,025,018 | $2,506,981,144 |
| Increase[5] | 19.23% | 28.55% | 28.55% |
| 1971-72 | 11,589,949 | 2,654,338,633 | 2,773,783,871 |
| Increase | 10.54% | 10.64% | 10.64% |
| 1972-73 | 12,064,761 | 3,026,027,939 | 3,162,199,196 |
| Increase | 4.10% | 14.00% | 14.00% |

The percent of increase of total expenditures for Vocational Education was identical when using either reported expenditure figures or figures adjusted to allow for underreporting. While there is a general relationship between expenditure rates of increase and enrollment rates of increase, there is also a noticeable difference. In 1971-72, the expenditure rate of increase declined more sharply than the enrollment rate of increase. In 1972-73, the expenditure rate of increase accelerated somewhat while the enrollment rate of increase continued to decline. The explanation may be in the increasing impact of inflation.

[5]The increases in 1970-71 are based on previous year data in the USOE Vocational Technical Education Report, FY 1970.

Part 2
Table 86

What has been the effect of inflation on Vocational Education expenditures?

Total reported Federal, State and local expenditures increased ten-fold in the decade 1963-1973, but the buying power of those funds was cut almost in half. It is difficult to assess the impact of inflation on one particular segment of the economy like education, and any attempt to do so is subject to exceptions and disagreements. Nevertheless, approximations can be made.

One method of doing so is to find a midpoint between possible extremes and apply that to expenditure figures. A lower limit of five percent could be used, although the actual rate of inflation has been higher than that for a number of years. An upper limit of ten percent would be conservative today, but would have been too high in the mid-60s. A rate of 7½ percent -- midway between five and ten -- would probably be a realistic constant rate. To approximate this changing condition, a set of calculations can be made using one percent in 1964, two percent in 1965, three percent in 1966 -- up to ten percent in 1973. This annually increasing rate applied to Vocational Education expenditures may approximate what actually occured to the buying power of the funds.

| Fiscal Year | Total Voc. Ed. Expenditures[6] | Purchasing Power |
|---|---|---|
| 1963 | $ 308,899,618 | $ 308,899,618 |
| 1964 | 332,785,114 | 329,457,263 |
| 1965 | 604,645,727 | 586,506,355 |
| 1966 | 799,894,562 | 754,300,572 |
| 1967 | 1,004,133,213 | 910,748,824 |
| 1968 | 1,192,862,965 | 1,030,633,602 |
| 1969 | 1,368,756,523 | 1,115,536,566 |
| 1970 | 1,866,152,701 | 1,422,008,358 |
| 1971 | 2,399,025,018 | 1,693,711,663 |
| 1972 | 2,654,338,633 | 1,720,011,434 |
| 1973 | 3,026,027,939 | 1,782,330,456 |

The Federal support provisions of the Vocational Education Act of 1963 thus were not wiped out by inflation, but they were seriously eroded.

Part 2
Tables 12, 18, 85

What has happened to the relative expenditures for Vocational Education from State and local funds compared to Federal funds?

The ratio has been roughly five to one, five times as much money spent for Vocational Education by the States and local school districts as by the Federal Government. This is without adjusting local expenditures for underreporting. The ration, which had declined in 1971-72, increased in 1972-73, when State and local expenditures increased by a much greater amount than Federal expenditures.

[6]Expenditure data prior to FY 1971 are taken from the USOE Vocational-Technical Education Reports.

| | 1970-71 | 1971-72 | 1972-73 |
|---|---|---|---|
| State and Local Reported Expenditures | $2,005,098,155 | $2,189,851,173 | $2,546,302,142 |
| Federal Expenditures | 393,926,863 | 464,487,460 | 479,725,797 |
| Ratio of State and Local to Federal Expenditures | 5.09:1 | 4.71:1 | 5.31:1 |

Whether the proportionate increase in expenditures by State and local school districts was made necessary by the pressure of enrollments, or by the proportionate decrease of Federal funds, or simply reflected the growing support of Vocational Education in many of the States is not known. All but four States increased their State and local expenditures in 1972-73 over the preceding year, a number of them substantially. One State more than doubled the amount, and several nearly doubled it. What this seems to mean is that to the extent that total expenditures were keeping up with increased enrollments and inflation at the same time, it was only through the extra efforts of the States and local school districts.

What has happened to the cost per student in Vocational Education?

Part 2 Tables 13, 14, 81, 84

The total cost per student for Vocational Education, after remaining almost stationary in 1971-72, surged upward again in 1972-73 as it had each year for the past decade. This was fairly evident at the secondary level, and much more evident at the post-secondary level. The reverse was true, however, in adult programs.

| | 1970-71 | 1971-72 | 1972-73 |
|---|---|---|---|
| Total Vocational Education Cost Per Student | $228.79 | $229.02 | $250.82 |
| Total Vocational Education Cost Per Secondary Student | 238.18 | 241.45 | 270.13 |
| Total Vocational Education Cost Per Post-Secondary Student | 534.00 | 538.15 | 623.28 |
| Total Vocational Education Cost Per Adult Student | 75.00 | 64.49 | 56.58 |

The difference in cost per student at the different levels can be explained by differences in contact hours. Post-secondary students average more training time than secondary students, and considerably more than

adult students. It should be noted that in 1972-73 adult enrollment was the exception to the rule with an accelerated growth rate, and adult cost per student was the exception to the rule in going down instead of up.

Part 2 Tables 82, 83

Has there been any noticeable change in the amount of funds used for disadvantaged and handicapped students in Vocational Education compared to total expenditures?

In both cases, the proportionate amount of expenditures has been fairly low and has not changed appreciably over the three-year period 1970-71 through 1972-73.

| | 1970-71 | 1971-72 | 1972-73 |
|---|---|---|---|
| Total Expenditures for Disadvantaged Vocational Education Students | $229,837,957 | $286,786,154 | $318,694,933 |
| Percent of Total Vocational Education Expenditures | 9.6 | 10.8 | 10.5 |
| Total Expenditures for Handicapped Vocational Education Students | $ 62,424,962 | $ 66,138,395 | $ 94,150,830 |
| Percent of Total Vocational Education Expenditures | 2.6 | 2.5 | 3.1 |

Federal legislation requires that fifteen percent of Federal support funds be used for the disadvantaged and ten percent for the handicapped. Congress did not require that matching State and local funds for Vocational Education should support these programs at similar levels, but an effort approaching that of the Federal set-asides might have been expected. As it is, the total support for disadvantaged and handicapped students in Vocational Education has not been particularly outstanding.

Part 2 Tables 15, 17, 81 Vol. I. Tables 102, 103, 104 Vol. II. Tables 70, 72, 76

Have expenditures for secondary, post-secondary and adult programs shown any noticeable change in relation to total Vocational Education expenditures?

The percent of total Vocational Education expenditures used at the secondary level remained virtually unchanged during the three-year period 1970-71 through 1972-73. The percent used at the post-secondary level increased steadily each year by a relatively small amount. At the adult level, the percent decreased each year in an amount roughly corresponding to the increase for post-secondary programs.

| | 1970-71[7] | 1971-72 | 1972-73 |
|---|---|---|---|
| Total Vocational Education Expenditures | $2,399,025,018 | $2,654,338,633 | $3,026,027,939 |
| Total Vocational Education Expenditures at Secondary Level | 1,545,546,923 | 1,744,002,000 | 1,985,094,000 |
| Percent of Vocational Education Expenditures at Secondary Level | 64.42 | 65.70 | 65.60 |
| Total Vocational Education Expenditures at Post-Secondary Level | 610,064,797 | 701,236,000 | 841,093,000 |
| Percent of Vocational Education Expenditures at Post-Secondary Level | 25.43 | 26.42 | 27.80 |
| Total Vocational Education Expenditures at Adult Level | 214,570,528 | 197,602,000 | 190,297,000 |
| Percent of Vocational Education Expenditures at Adult Level | 8.94 | 7.44 | 6.29 |

Because the definitions of post-secondary and adult Vocational Education are quite uncertain among the States, and possibly from year to year within some States, differences in these two categories may be discounted. In all probability, the ratios of spending have remained quite constant, based on the percent of total funds used at the secondary level.

How much of the cost of Vocational Education as reported by the States was used for instruction, and how much of the cost of instruction was used for instructional salaries?

Part 2 Tables 15, 40

Of the total expenditures for Vocational Education in forty-nine States and Puerto Rico, eighty percent was used for instructional costs. Of the

[7]Figures shown in this column do not match figures shown in Volume 1, Tables 102, 103, and 104 because the Territories have been eliminated to make the figures correspond to 1972 and 1973 figures.

instruction total, salaries alone accounted for seventy-eight percent. Instructional salaries figured as a part of the total cost of Vocational Education amounted to sixty-two percent.

| | | % of Total Voc. Ed. Costs | % of Total Inst. Costs |
|---|---|---|---|
| Total Vocational Education Expenditures | $2,950,563,957 | | |
| Total Instructional Costs | 2,366,664,540 | 80 | ——— |
| Instructional Salaries | 1,843,200,354 | 62 | 78 |
| Instructional Equipment | 160,342,866 | 5 | 7 |
| Other Instructional Costs | 363,121,320 | 12 | 15 |

These figures may be interpreted in different ways, depending on one's point of view. If the cost of an instructional program is thought to be largely the salaries paid to instructional personnel, sixty-two percent will come as a surprise. If the cost of administration, ancillary services, equipment, and other expenditures incidental to instruction are taken into account, sixty-two percent for instructional personnel salaries may seem low. In any case, it is worth noting that the total Federal expenditure for Vocational Education, which was $479,725,797, equaled less than one-fourth of the cost of instructional salaries alone.

Part 2
Table 41

How much of the cost of Vocational Education as reported by the States was used for ancillary services, and how much of the cost of ancillary services was used for administration, teacher education, research, and curriculum development?

The cost of ancillary services in forty-nine States and Puerto Rico was $280,499,032, which amounted to ten percent of their total reported expenditures for Vocational Education. The major portion of this -- eighty-one percent -- went for administration, supervision, and evaluation. Eleven percent was used for teacher education, five percent for research and three percent for curriculum development. When figured as part of the total reported cost of Vocational Education, administration, supervision and evaluation accounted for seven and one-half percent. Teacher education accounted for one percent, research and demonstration one-half of one percent, and curriculum development less than one-third of one percent.

| | | % of Total Voc. Ed. Costs | % of Ancillary Costs |
|---|---|---|---|
| Total Ancillary Costs | $280,499,032 | 9.3 | ——— |
| Administration, Supervision, and Evaluation | 226,690,842 | 7.5 | 80.8 |
| Teacher Education | 29,778,550 | 1.0 | 10.6 |
| Research and Demonstration | 14,580,555 | 0.5 | 5.2 |
| Curriculum Development | 9,449,085 | 0.3 | 3.4 |

Considering the clear intent of the 1963 and 1968 Federal legislation, these expenditures for teacher education, research, and curriculum development would appear to be extremely low. The Federal expenditure for research alone under the 1963 Act is supposed to be ten percent. Failure by the Federal Government to follow this provision -- both the U.S. Office of Education in its annual budget and Congress in its annual appropriations -- has been chiefly responsible for a correspondingly low total effort in the States. The generally low Federal appropriation for all Vocational Education in recent years, compared with authorizations and expectations under the legislation, have very likely been responsible for the low levels of spending for teacher education and curriculum development also.

How much of the reported cost of Vocational Education was used for guidance and counseling?

Part 2 Tables 42, 43

A total of nearly $88 million was reported by the States as used for vocational guidance and counseling. This was approximately three percent of the total reported Vocational Education expenditures. Of this amount, $83,658,876 can be identified by level; nearly seventy percent was used at the secondary level, twenty-five percent at the post-secondary level, and five percent at the adult level. With 7.3 million Vocational Education students at the secondary level, and 1.3 million at the post-secondary level, and 3.4 million at the adult level, the amount spent per student was $7.87 for secondary, $15.56 for post-secondary, and $1.43 for adult.

Guidance and counseling for adults is relatively slight. This again raises questions regarding the services provided by Vocational Education and manpower training programs to the same population. A question must also be raised regarding the amount of Vocational Education guidance and counseling at the secondary level. The expenditure per student would hardly pay for one hour for each student in an entire year.

| | Expenditures for Guidance & Counseling | Total Voc. Ed. Enrollment | Voc. Ed. Guidance & Counseling Cost Per Student |
|---|---|---|---|
| Secondary | $57,852,731 | 7,348,666 | $ 7.87 |
| Post-secondary | 21,002,145 | 1,349,465 | 15.56 |
| Adult | 4,804,000 | 3,366,630 | 1.43 |
| Additional[8] | 4,305,524 | | |

## Completions and Placements

Part 2
Tables 19,
88-90

**How much of an impact did Vocational Education have on the employment market in 1972-73 compared with previous years?**

The employment rate of vocational graduates and those who left early with marketable skills dropped slightly in 1972-73 from the previous year, but was still impressive and higher than two years before. Altogether, 1,809,754 students had completed their programs the previous year and an additional 110,377 had left prior to normal completion time with marketable skills. In the fall of 1973 almost one-third of the total, 692,498 were employed full-time in the fields for which trained or related fields. Only 92,323, slightly less than five percent, were known to be unemployed.

Over one-third of a million former students were known to be unavailable for work. Of these, over a quarter of a million were continuing their education at a higher level. The number known to have been available for placement was 1,033,483 and of these 91.07 percent were employed. This was down somewhat from 94.05 percent the preceding year. The number of former secondary Vocational Education students employed was 89.98 percent of those available for work; post-seocndary, 92.88 percent; and adults, 91.65 percent.

| | 1970-71 | 1971-72 | 1972-73 |
|---|---|---|---|
| Completions | 1,441,635 | 1,560,145 | 1,809,754 |
| Left Before Completion with Skills | 106,283 | 137,022 | 110,377 |
| Total Prepared for Employment | 1,547,918 | 1,697,167 | 1,920,131 |

[8]Expenditures for guidance and counseling are reported by level only for support programs under Part B of the 1963 Act as amended. Additional guidance and counseling expenditures are also reported for special disadvantaged, research, exemplary, consumer and homemaking, and cooperative education. These are not reported by level.

| | 1970-71 | 1971-72 | 1972-73 |
|---|---|---|---|
| Unknown | 280,708 | 285,560 | 305,759 |
| Employed Full-time in Field for Which Trained or Related Field | 540,143 | 661,050 | 692,498 |
| Known to be Unemployed | 74,642 | 86,923 | 92,323 |
| Employed Full-time in Other Fields | 124,554 | 203,068 | 248,662 |
| Known to be Not Available for Placement | 337,746 | 444,052 | 421,160 |
| Continuing Education at Higher Level | 298,680 | 319,203 | 289,060 |
| Available for Placement | 783,923 | 918,808 | 1,033,483 |
| Total Percent of Completions and Early Leavers with Skills Who were Employed | 42.94% | 50.92% | 49.02% |
| Percent of Those Available for Placement Who were Employed | 84.79% | 94.05% | 91.07% |

While the data in followup reports are questionable in many States, they are being collected in others with increasing reliability each year. In a number of States validity tests are being made, and almost invariably they have shown the data previously collected to have been reasonably accurate. It is still not possible to say that National statistics on Vocational Education placement and followup are completely reliable, but there is increasing evidence that they are substantially more reliable than might have been expected.

This being the case, two of the sets of figures above over a three-year period appear to be significant. The number available for work increased annually with the rate of increase dropping off somewhat in 1972-73. The percent of those available who were employed increased noticeably from the first year to the second, and declined the third year but by less than half of the second year gain.

How has the employment record of former Vocational Education students compared with that of the rest of the population?

Part 2
Table 87

In the fall of 1973, the number of students from the preceding year who were employed was 91.97 percent of those available for work. This meant an unemployment rate of 8.93 percent. The National unemployment rate for

the total labor force at the same time was 4.8 percent.[9]

The 8.93 percent unemployment for Vocational Education students should not be compared with the rate for the total labor force, however; it should be compared with that of the same age groups. Among all youth in the 16-19 year age group, 29.9 percent were unemployed. In the 20-24 year age group, 16.4 percent were unemployed.

Negroes and other ethnic minorities in the total labor force had a higher rate of unemployment than former Vocational Education students -- 9.1 percent. Negroes and other ethnic minorities in the 16-19 year age group had an unemployment rate of seventy-two percent, and in the 20-24 year age group of 30.2 percent.

Part 2
Tables
88-90

How have secondary, post-secondary and adult Vocational Education students compared in their impact on the employment market and their rate of employment?

Total impact on the employment market, which means number of persons available for work and number employed, has been much greater by secondary students than by post-secondary or adult, due to their larger numbers. In rate of employment, all three groups have been nearly the same each year.

| | 1970-71 | 1971-72 | 1972-73 |
|---|---|---|---|
| Secondary Students<br>Total Completions[10] | 997,539 | 1,027,349 | 1,063,251 |
| Total Available for Work | 505,965 | 533,973 | 562,828 |
| Total Employed | 438,999 | 501,650 | 506,428 |
| Total Employed as Percent of Number Available | 86.76% | 93.95% | 89.98% |
| Post-Secondary Students<br>Total Completions[11] | 304,144 | 341,682 | 401,887 |
| Total Available for Work | 195,039 | 256,174 | 274,745 |
| Total Employed | 181,212 | 241,857 | 255,183 |
| Total Employed as Percent of Number Available | 92.91% | 94.41% | 92.88% |

[9] Employment and Earnings, September 1973, U.S. Department of Labor, Bureau of Labor Statistics, Washington, D.C., 1973.

[10] Prior to 1972-73 data on both completions and early leavers with employment skills were required on Federal report forms by level. Beginning in 1972-73 only completions, not early leavers, were required by level. Early leavers data were required as a total of all three levels only.

[11] Ibid.

| | 1970-71 | 1971-72 | 1972-73 |
|---|---|---|---|
| Adult Students Total Completions[12] | 137,251 | 197,125 | 344,616 |
| Total Available for Work | 82,919 | 132,929 | 195,910 |
| Total Employed | 72,317 | 124,273 | 179,549 |
| Total Employed as Percent of Number Available | 87.21% | 93.49% | 91.65% |

It should be noted, in view of occasional questions raised about the effectiveness of Vocational Education at the secondary level compared with post-secondary and adult, that the data here support an affirmative answer.

How has Vocational Education supplied the demand of the employment market occupationally? — Part 2 Tables 91-108

This question can be answered only by individual States, and very few of them can supply the essential data for all three years. A logical measurement of supply and demand adopted by Project Baseline and strongly endorsed by State Directors and outside consultants is shown in Tables 91-108 in Part 2 of this report. For States from which data are available, employment demand and Vocational Education completions, those available for work, and placement figures are examined in eighteen separate occupational clusters.

Since the U.S. Office of Education dropped its requirement to report numbers available for work and numbers employed by occupational code, it is impossible to make National supply and demand tabulations. Followup data are reported by the traditional occupational areas in Vocational Education, but for purposes of supply and demand analysis these are much too broad and contain too many overlapping programs.

## Instructional Personnel

What is known about the instructional personnel who provided the training for twelve million Vocational Education students in 1972-73? — Part 2 Tables 44, 45

There were 244,300 Vocational Education teachers reported employed. The total full-time equivalent at the secondary level was 116,974, and at the post-secondary level, 40,605. There were 5,698 full-time and 70,186 part-

[12] Ibid.

time teachers at the adult level.

Of the total at all levels, 91,992 received some kind of in-service training during the year. The number of students enrolled in vocational teacher preparation programs was 59,330, approximately one-fourth the number then teaching. The number who would complete their preparation and become Vocational Education teachers would be the number available to replace normal attrition and provide for growth.

## State Programs

Part 2 Appendix A (Available upon request)

### What do the States know about their own Vocational Education Programs?

Probably a great deal more than they are reporting. State reports, even to their own constituencies, are usually limited to what the Federal Government requires them to report. Many of the States have management information systems capable of producing much more, and in some cases they are getting data from these systems which go considerably beyond Federal reporting requirements.

Whenever it has been possible to do so, Project Baseline has collected from individual States the additional information they are able to make available. These data, together with population and manpower information from National sources and the information on their Federal report forms, have been assembled as individual State profiles. Their usefulness is chiefly to the States themselves, but careful examination shows some of the knowledge they have about their Vocational Education programs. They are found in Part 2, Appendix A of this report which is available on request.

Part 2 Appendix A (Available upon request)

### What has happened to Vocational Education in individual States in three years?

In many cases, the individual States' performances have not been greatly different from that of the Nation as a whole. In a great many other cases, however, there have been significant and even dramatic changes. Alaska, the District of Columbia, Maine, Nevada, and Wisconsin, for example, each had an increase of fifty percent or more in Vocational Education enrollments per 1,000 population. Twenty-three States reported substantial losses in their enrollment of disadvantaged or handicapped students or both; others reported percentage increases of 318.85, 324.50, 244.50, 167.15, 350.00, 133.53, 199.93, 272.21, 118.65, 102.23, 140.79, and 311.94 in disadvantaged enrollment and 261.08, 205.19, 953.17, 126.55, 102.22, 113.27, 155.40, 151.79, 192.23, 331.08, 236.44, 106.59, 232.32, 122.70, and 174.93 in handicapped enrollment.

Some States reduced their enrollments in agriculture by 70.73, 10.26,

21.99, 54.21, and 28.13 percent while other States increased their enrollments in agriculture by 26.03, 24.90, 44.43, 25.12, 33.59, 36.58, 177.21, 36.12, 33.75, 93.91, 25.53, 47.15, 35.93, 31.80, and 47.49 percent. Agriculture as a percent of total enrollments increased by as much as 3.51 percentage points and decreased by as much as 14.14 percentage points. Similar enrollment variations within separate States occurred in each of the occupational areas.

Ten States reduced their total expenditures per student in Vocational Education by thirty dollars or more, two of them by nearly two hundred dollars and one by more than three hundred dollars. At the same time, nineteen other States increased their total expenditures per student by thirty dollars or more, two of these by more than two hundred dollars.

One State increased the percent of its total Vocational Education expenditures used for disadvantaged students by 10.1 percentage points, another by 9.8, and five others by five or more. At the same time, another State reduced its percent of expenditures for disadvantaged students by 25.5 percentage points, another by 14.6, and another by 12.3. Similar ups and downs were evident in the percent of expenditures used for handicapped students.

These are simply examples of what has happened to Vocational Education in the individual States in three years. The complete details inasfar as data were available are reported in a longitudinal study attached to the profile of each State in Appendix A of Part 2 which is available on request.

## III. THREE YEARS OF MANPOWER TRAINING, 1971-73

### Enrollments

Part 2 Tables 109-112

**Did manpower training programs expand in 1972-73?**

The actual number of persons who can be identified by the U.S. Department of Labor as trainees, and reported by State and by occupational program, dropped sharply in 1972-73.

| | 1970-71 | 1971-72 | 1972-73 |
|---|---|---|---|
| Total Enrollment in Occupationally Reported USDL Programs | 432,027 | 346,066 | 149,593 |
| MDTA Enrollment | 179,483 | 209,269 | 85,962 |
| EOA Enrollment | 252,544 | 136,797 | 63,631 |

Within MDTA and EOA, every manpower program was down. MDTA Institutional dropped from 132,736 to 75,417. MDTA-OJT was down from 16,560 to 10,545. MDTA-JOP and part-time figures were not available for 1973. CEP dropped from 42,442 to 25,645; NYC from 38,110 to 20,908; Operation Mainstream from 10,302 to 9,633; and PSC from 8,583 to 6,016. One program for which data were not available in 1971-72, OIC, reported 1,429 in 1972-73. WIN, with 37,360 in 1971-72, was not reported by occupation in 1972-73.

Part 2 Table 109

**Why do manpower training data in Project Baseline Reports differ from data in "The Manpower Report of the President"?**

The 149,593 trainees reported by Project Baseline for 1972-73 are those for whom the U.S. Department of Labor in Washington, D.C., received properly filled out forms containing names and addresses, kinds of programs, occupational training provided, and other details including personal characteristics. They are taken from a U.S. Department of Labor computer printout based on complete records of persons enrolled. Neither the U.S. Department of Labor nor Project Baseline is satisfied with their accuracy.

The Manpower Report of the President, published by the U.S. Department of Labor, shows a total manpower training enrollment in FY 1973 of 394,300 when adjusted to exclude trainees who cannot be identified by occupation. This is a difference of 244,707 from the figure reported by Project Baseline, yet they both came from the same source -- the U.S. Department of Labor. The Project Baseline data are the only detailed data; The

Manpower Report of the President contains National totals only. As such, it contains substantial numbers of persons who received support services under the manpower legislation but no training in occupational skills.

The only data, therefore, which can be compared with Vocational Education are the Project Baseline figures. The information system through which they have been gathered and processed contained excellent features, but has never worked well. Original forms were completed by local training agencies, often by persons so inexperienced and so limited in formal education that the information was inaccurate to begin with. The forms were sent to USDL Regional Offices, and from there to Washington, D.C. There was no way of knowing how many of those sent actually arrived.

The USDL computer was programmed to reject those with obviously incorrect data such as non-existent State, program, or occupational training codes and Social Security numbers with the wrong number of digits. In 1972-73 these problems were compounded by the expectation that new manpower legislation was on the way and the existing programs would be phased out. Careless handling of records might be expected to increase under those circumstances, and probably did.

What use can be made of the manpower training information available? — Part 2 Tables 113-117

Realizing that the figures are too low, they may still be examined in some detail for State distribution and ethnic participation. They show a fairly consistent pattern among the States from 1971-72 to 1972-73, with some exceptions. Most of the States are reported as having had approximately the same percentages of decrease, but at least ten States dropped off more sharply than the Nation as a whole. These are States fairly representative of all sections of the United States, so whatever the cause it was not confined to any particular geographic area.

The percent of manpower trainees in the total number of persons enrolled in publicly supported occupational training programs also declined in FY 1973. This is true whether the National totals reported in the Manpower Report of the President are used, or the U.S. Department of Labor's computer printout for Project Baseline is used. The actual percentage is a matter of conjecture. It lies somewhere between three and one percent, with Vocational Education making up the rest. It dropped from the year before in either case, as both sets of manpower totals declined while the Vocational Education total increased.

The ethnic enrollment in manpower training did not change significantly. All minority groups remained approximately the same, with only slight increases in the percentages of each in total manpower enrollment.

Did the cost of manpower training change noticeably in 1972-73? — Part 2 Tables 109, 119, 120

The Federal allocations for manpower training decreased along with enrollment. Total MDTA allocations dropped from $424,553,000 to $380,812,000;

and EOA from $591,817,000 to $412,992,000.[13]

It has become virtually impossible to compute the Federal cost per trainee with any degree of reliability due to the nature of the data. Project Baseline has continued to do so for 1972-73, but the reader is warned in using these tables of misrepresentations they contain. The data are all that are available by State, program and occupation of the individual trainees. They are further compromised by the U.S. Department of Labor having available only Federal allocations, not actual expenditures. And the Federal allocations are for all enrollees and all services provided under the manpower legislation, with no way of separating out the cost of training alone. The enrollment data reported by Project Baseline do not include a substantial number of these persons, especially in the EOA programs, who received services but little or no training in occupational skills.

Considering all this, two observations can nevertheless be made: The allocation per trainee went up in 1972-73; and the pattern was fairly uniform throughout the United States. Using the figures from the U.S. Department of Labor's computer printout of manpower enrollments by State, the allocation per trainee increased from $2,028.74 to $4,430.00 in the MDTA programs, and $4,326.24 to $6,490.42 in the EOA programs. If the trainee totals in the Manpower Report of the President are used, the MDTA allocation increased from $1,824.46 to $1,950.88 per trainee and the EOA allocation increased from $1,857.44 to $2,074.29 per trainee. Even these figures are considerably too high if every person is included who enrolled in a program but received no identifiable training.

Part 2
Table 121

What is the employment record of manpower trainees who complete their programs?

The Manpower Report of the President for FY 1973 shows a post-program employment rate for all programs of sixty-two percent.[14] It has never been possible, however, to get employment data for manpower trainees comparable to what is available for Vocational Education students. Followup information is not compiled on an individual trainee basis. Completion and employment figures in the Manpower Report of the President represent all enrollees, not just those who received some kind of actual training. They are computed as Fiscal year totals only. Thus in any given year if a substantial drop in the number of completers took place and employment increased, the employment rate could go over 100 percent.

That is not likely to happen, however, because of the substantial number of manpower enrollees who are provided support services but little or no training. In addition, there are other factors which account for an employment rate of only sixty-two percent. Manpower trainees are largely if not altogether disadvantaged persons. They are not as employable as the average person because of personal disabilities. They are often at

[13] Manpower Report of the President, U.S. Department of Labor, April, 1974, p. 358

[14] op. cit., p. 53.

an age when both training and getting a job may be increasingly difficult. Many of them live in depressed economic areas, and they are often less mobile than other workers. Over-all, then, it is impossible to compare the sixty-two percent employment rate reported by the U.S. Department of Labor for manpower trainees with the ninety-one percent reported by the States for Vocational Education students.

Among its individual programs, the U.S. Department of Labor reports a post-program employment rate of fifty-seven percent for MDTA Institutional, seventy-eight percent for MDTA-OJT, sixty-eight percent for PSC, and sixty-five percent for CEP. Figures are not given for NYC, Operacion Mainstream, of OIC.

## Costs

What has happened to the cost of manpower training?

Manpower Report of the President Fiscal Years 1972, 1973, 1974

Allocations dropped to just under $800 million in FY 1973 after topping $1 billion the year before.

| | FY 1971 | FY 1972 | FY 1973 |
|---|---|---|---|
| MDTA | 335,752,000 | 424,553,000 | 380,812,000 |
| EOA | 509,691,000 | 591,817,000 | 412,992,000 |
| TOTAL | 845,443,000 | 1,016,370,000 | 793,804,000 |

These are allocations, not expenditures, but they are the only data the USDL can provide. They include all funds allocated for programs in the States and local communities, not just those which can be occupationally identified. And while they are allocated for training programs, they are used also for support services, not just training.

## Changes Under CETA

What changes may be anticipated in manpower training under the new Comprehensive Employment Training Act?

Manpower Report of the President April 1974

Mention must be made at this time of the new Comprehensive Employment Training Act (CETA) which became law in December 1973. It largely replaces the manpower training programs generated by several legislative acts of the 1960s, which Project Baseline has attempted to include in its National reports. As existing programs are phased out they will be replaced by new programs under the planning and direction of Governors and chief elected officials of cities and counties. Those are the prime sponsors. Services will be provided according to plans developed by each

prime sponsor's planning council. They will include everything currently offered by the old manpower programs, with training again being an important function of the program but by no means its only one.

CETA's principle difference from the manpower programs which have preceded it is its intended decentralization. Planning, operation, results and reporting are all the responsibility of State and local agencies. The Federal Government's major role is to supply the money.

Even though it has been considered a non-categorical program, parts of the act do make provision for categorical distribution of the funds. Eighty percent goes to State and local prime sponsors. One percent of that amount is to be used for staffing and for State Manpower Councils. Up to five percent is to be used for promoting combinations of local government prime sponsors to organize along market area rather than strictly political lines. Five percent is for the States to use in manpower information, technical assistance to prime sponsors, special services in rural areas, and model programs for correctional institutions.

Also categorical in a sense are the special target groups for which the CETA programs are intended. These include persons of limited English-speaking ability, persons in correctional institutions, members of Indian and Alaskan native communities, migrants and seasonal farm workers, students from low income families in grades 9-12 or of the age equivalent to students in those grades, and middle-aged and older men and women unemployed because of largescale reducation of jobs in a community.

In view of the categorical purposes of CETA clearly intended by Congress and written into the act, a reliable information system based on actual records at the local operating level would seem to be necessary. The authority to establish such an information system is provided in Section 613(c), which says each recipient of funds under the act "shall...make such reports to the Secretary [of Labor] or the Comptroller General of the United States as he requires."

Unfortunately the U.S. Department of Labor does not appear to be planning to carry out this provision in a manner capable of providing Congress or the public with the information that may be desired. Instead, in the interests of decentralization, only summary data by prime sponsors are expected to reach Washington. "More detailed data would be maintained by the sponsor, in a format most convenient to him."[15] Local sponsors will be expected to maintain "records on the numbers and kinds of clients enrolled, services given, and program outcomes, along with the cost of project activities."[16] Experience with the quality of information flowing from that kind of system shows that it leaves much to be desired. It is to be hoped that before the CETA programs are fully established, administrative or even legislative action will be taken to assure adequate information at the Federal level on how the purposes of the legislation are being carried out.

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[15] Manpower Report of the President, U.S. Department of Labor, April 1974, p. 63.

[16] Ibid

## IV. THREE YEARS OF STATE AND FEDERAL REPORTING, 1971-73

### What effects have Federal reporting requirements had on information about Vocational Education?

Part 2
All
Tables

The categorical aid programs in Federal Vocational Education legislation have led to requirements by the U.S. Office of Education for reports containing more detail than in any other educational field. These in turn have stimulated the development of information systems in the States to supply the data. Other provisions of the Federal legislation, notably planning and evaluation procedures, have probably been an influence in many States decisions to go beyond information reporting systems to develop sophisticated management information systems. Furthermore, many of these States have been able to establish their systems primarily because of the availability of Vocational Education research funds in each State under the 1968 Amendments.

There can be no question of the benefits from Federal reporting requirements. Unfortunately, there have been negative results also. Federal and State officials try to avoid excessive demands on the local schools, which is understandable. But, their limited selection of data to be reported leaves gaps in the knowledge they can then pass on to legislative bodies and the public. The same gaps may often impair the management of Federal and State resources for the support of Vocational Education programs in the local schools.

The followup report of former students who have completed Vocational Education programs is a good example. It lists only the total number of completions, those available for work, those employed full-time in the fields for which they were trained or related fields, those employed in non-related fields, those unemployed who are seeking work, and those continuing in school. The great majority of States collect this information and nothing more. They have no other information on benefits to the students from Vocational Education. They do not know, for example, how many students continuing in school are using their Vocational Education as a foundation for more advanced preparation. They have no knowledge of the advantages, if any, which former vocational students find they have over other new employees in salaries and promotions.

The most serious gap in followup information is the lack of knowledge about what has happened to particular groups of former students such as the disadvantaged, handicapped, and ethnic minorities. When the National unemployment rate for Negroes and other ethnic minorities in the 16-19 year age group is seventy-two percent, as it was in the fall of 1973, while the unemployment rate of all former vocational students is less than ten percent, it would seem that the unemployment rate of Negroes and other ethnic minorities who had completed Vocational Education programs would be critical information. But it is not available, and one reason is that Federal reports do not require it.

In 1972-73, a few changes in Federal reporting requirements resulted in extensive new damage to the reporting systems already established in at least half the States. These were deletion of the requirements to report ethnic and sex information, secondary enrollments separate from grades below nine, and USOE occupational codes for job placement in the followup information. Relaxation of the Federal reporting requirements need not have prevented the States from continuing to get this information for their own purposes, and many of them have done so. Others, however, have not. The result is that National reporting of Vocational Education has been greatly weakened in these areas.

The ethnic and sex identity of Vocational Education students may not be critical information in itself, but without it there is no way of knowing if the public assistance programs are reaching these target populations and if the intended benefits are being realized. Dropping of the requirement to report ethnic and sex statistics is a step backward. State Dirctors of Vocational Education have indicated to Project Baseline that they are largely in favor of continuing to collect this information and that the Federal Government should restore its requirement to do so.

Elimination of the Federal requirement to report separately the elementary and secondary student enrollments in Vocational Education is hard to understand. Although the number in most States below grade nine is not very great, including them at all in the secondary figures results in distortion of the facts. When all of the elementary students are counted who have units of career or vocational awareness, or even exploratory programs, the distortion becomes a serious problem. In fact, the Federal reporting requirement would be considerably improved by requiring Vocational Education enrollments for each grade level. The total impact of a Vocational Education enrollment of twelve million students on the employment market, and on educational and manpower planning, is impossible to project unless it is known how many are going to complete their programs each year.

The most serious damage in the 1972-73 changes was dropping of the requirement to report job placement by USOE occupational code. If the followup is to be used as an evaluation of training received, it is no longer possible to evaluate programs by occupation. Further, there seems to have been for some time a general inability on the part of the Federal agencies to relate Vocational Education adequately to the employment market, i.e., a failure to group large numbers of job titles and training programs into logical and manageable categories for supply and demand analysis. This deletion places another obstacle in the way of accomplishing that widely recognized need.

Part 2
Matrices
1-6

## What definitions are the States using in reporting Vocational Education data?

An effort was made this year to find out how each State arrives at its own definitions of the six reporting categories in Vocational Education where lack of National uniformity is most evident. The criteria used in each case are shown in a series of matrices on pages four through ten

in Part 2 of this Report. From those matrices it is possible to arrive at definitions which represent at least to a considerable extent the actual usage of the terms for two of the categories in State and Federal reporting -- Vocational Education and post-secondary Vocational Education. These definitions are based solely on criteria used by at least or nearly two-thirds of the States. (In this section, the term "States" includes the District of Columbia.) They are not entirely satisfactory for reporting purposes, because they allow considerable latitude in the use or disregard of additional criteria. They may be, however, a step in the right direction.

VOCATIONAL EDUCATION: A program of study which must provide job entry level skills, taught by certificated instructors who have work experience in the field taught, based on employment demand, and which uses a business/industry/labor/community advisory council.

Eleven criteria were examined, plus another undefined to allow States to include any not specified. Of the four criteria in the definition, as applied to the secondary level, forty-six States specify that the program must provide job entry skills, forty-one require certificated instructors with work experience in their fields, forty use employment demand as a criterion, and thirty-two include a community advisory council requirement. Post-secondary and adult requirements differ in a few cases, but for the most part are the same.

A sampling of the responses concerning the other seven criteria shows, for example, that seventeen States require a specified number of contact hours in secondary Vocational Education, twenty-six do not, and the practice varies in the rest. Cooperative work experience is required in only two States at the post-secondary level, and is optional in one other; it is not required at all at the secondary or adult levels. Cluster training is required at the secondary level in four States, and at the post-secondary and adult levels in one of these. At the secondary level, vocational guidance and counseling is required in fifteen States, job placement assistance in eighteen States, basic education and work-related skills in five. Federal reimbursement is a criterion in reporting Vocational Education at all three levels in ten States.

POST-SECONDARY VOCATIONAL EDUCATION: Any program offered in a Junior or Community College or other two-year institution which meets the State's criteria for Vocational Education. This is admittedly a weak definition, and the one specific, institutional criterion included is used in only twenty-seven States. (Eighteen States, including thirteen of those twenty-seven, specified enrollment in grades 13 or 14 as a separate criterion.) Possibly more States would have been counted if the definition had included terminal programs of less than four years in four-year colleges.

Eleven States include daytime classes only. Twelve States require a high school diploma or GED for students to be reported as post-secondary. The lack of agreement here suggests a degree of National confusion in the use of the term which would seem to reduce current statistics in this category to almost meaningless figures. No substantial agreement could be found among the States on definitions of the four other reporting categories in

Vocational Education where lack of uniformity is most evident. These categories are as follows:

ADULT VOCATIONAL EDUCATION: No definition is possible for this category based on common criteria in the States. Thirteen States use a specific age requirement. Seven States identify enrollment only in evening classes as a criterion. On no other criteria was there even significant minority agreement among the States. The situation is similar to that in reporting post-secondary, but evidently worse.

COMPLETIONS: One of the USOE reporting requirements upon which some significance is placed in evaluating Vocational Education is the number of annual completions. Based on current State practices a common definition is impossible. Not only are there no common criteria used by more than a very small number of States, but the great majority have no standardized criteria for their own schools to follow. Forty-three States leave it entirely up to the individual teacher's judgment. Perhaps this is the way it should be. Strong arguments could be advanced in support of this position. Such a practice, however, reduces the validity of statistical reporting, a problem which perhaps could be overcome by determining what criteria are used by most teachers and accepting these.

EARLY LEAVERS WITH MARKETABLE SKILLS: Nearly the same problem of definition exists here as with completions. Thirty-nine States leave it up to the teacher to decide if a student who drops out has marketable skills. However, there is quite a variation among these States as to whether the teachers can include only those students who have dropped out of school, those who have dropped out of the program, or both. Twenty-four States require that the early leaver have demonstrated marketable skills of obtaining a job based on the skills acquired.

RELATED FIELD: Twenty-eight States accept each individual teacher's judgment as to whether a former student's employment is in a field related to that in which training was provided. However, various States require that the job be within a cluster of related programs (twenty-four States altogether), within the same code as that for which the student was trained, related by work content, or related by title (four States altogether). The same problem exists here as in the preceding terms, and the results of statistical reporting must be judged accordingly.

Part 2
Table 122

How satisfactory are present Vocational Education information systems?

The need for information even at the State level is greater than the means to supply it at present, and limitations at the State level are only compounded at the Federal level. In both of the preceding volumes in this series, problems in the information available about Vocational Education and manpower training are discussed. In Volume I, pages 419-422, in a section entitled "Information and Credibility Gaps", some of the more serious problems were raised. The second chapter of Volume II, pages 15-43, describes these and other problems at greater length under

the heading "Through a Glass Darkly". The reader is urged to review both of these previous discussions for a better understanding of present difficulties in knowing what is really happening in Vocational Education and manpower training throughout most of the United States today.

The situation varies widely from State to State in Vocational Education. It is at a critical point of decision in manpower training. The technology and the resources are probably available, awaiting only political and administrative decisions, to have within a relatively short time a data base at the State and Federal levels capable of supplying all of the information for which a need is known to exist. Moreover, it could be as accurate and current as the administrative records in local educational institutions and training agencies where the information originates.

Project Baseline has asked the Congressional Education and Appropriations Committees, the National Advisory Council on Vocational Education, the Bureau of Occupational and Adult Education in the U.S. Office of Education, and the State Directors of Vocational Education what information they need. Without exception their needs go considerably beyond the information now being collected by the U.S. Office of Education. Both the Congressional Committees and the USOE Bureau of Occupational and Adult Education need information that is not now being collected by any State.

Many of the needs expressed are for information that cannot be collected in a predesigned form. Cost per instructional unit, for example, can be computed by each local school. But if these costs are simply forwarded to the State agencies they represent only information about each of several thousand different courses located in hundreds or thousands of different schools. They can be averaged, but the averages would be virtually meaningless. It should be possible to make Statewide tabulations of the cost per instructional hour for each course, each occupational area, special courses for the handicapped and disadvantaged, and for these categories in different kinds of schools -- rural, suburban, and inner city.

Similarly, the number of Negroes, for example, enrolled in each course and the number who complete their programs or drop out with marketable skills could be reported by each local school. The number who are employed following their vocational preparation in each occupational area could also be reported. This could be done for each of the ethnic minorities, the handicapped, the disadvantaged, and perhaps the more advanced or gifted students as well. It would add considerably to the burden of local schools to have to compile all of these figures, and would add to the time it takes to get any information from the schools to the State agencies and to the U.S. Office of Education. But it could be done.

It would still not satisfy the needs for information by the Congressional Committees, the USOE Bureau of Occupational and Adult Education, and some of the State Directors. All they would have would be the totals passed up from one level to another. They would still not know how many of the disadvantaged students were also Negroes or belonged to other

ethnic minorities. They would not know how many of any particular group lived in neighborhoods where the percent of that group was high or low, or where the educational level of the population was low, or where the predominate employment opportunities were in the areas in which most of the students were being trained.

If, instead of compiling numbers of students -- or expenditure totals -- by various categories and giving this information to the State agencies, local schools would send data elements from their student and administrative records, the States could make their own compilations. If the same original source data could also be passed on to the Federal level, then the Congressional Committees and the U.S. Office of Education could make whatever compilations they might need. The range of information thus available at both the State and Federal levels about Vocational Education and manpower training programs, students, costs, and results would be infinitely greater than is possible under present methods of reporting.

It should be pointed out that this is technically possible. Roughly half the States are doing it now to some extent in collecting individual student data. Project Baseline has for the past two years collected source files from a number of States and derived information from them which even the States supplying the data had not produced.

It should also be pointed out and strongly emphasized that the data collected at the National level by Project Baseline contain no student names, identifying numbers, or other personal information which can be connected with actual persons. It is impossible for anyone with the data supplied to Project Baseline to know who the individuals are whose data files are being used. Confidentiality of information can be protected at the source. This is not only possible but essential in an information system of the kind being discussed here.

Most if not all of the State systems which are capable at the present time of using original source data files do collect names, identifying numbers, and in most cases addresses. This is a decision for each State to make. There are definite advantages in having this information at the State level, particularly in following up individual students for information about later employment and the results of different kinds of programs in different locations and perhaps for different purposes. But it is neither necessary nor desirable at the Federal level.

Project Baseline has undertaken during the past year to find out as nearly as possible what the actual source data files would be which are capable of supplying the Federal Government with the information it needs about Vocational Education and manpower training. A list with suggested definitions has been developed containing thirty-eight data elements. These will not provide all of the information the Congressional Committees and the USOE Bureau of Occupational and Adult Education have said they need. They will, however, provide most of it. The list has been kept to a reasonable minimum so as to keep the cost and effort of collecting data at a minimum while still providing a vast amount of information embracing everything which might be considered essential.

The entire list is broken down into three parts: course information,

student and trainee information, and professional personnel information. Which courses, which students and which personnel are to be included is determined entirely by each school or by the State agency from which the data are obtained. A uniform definition of Vocational Education is needed to assure that these determinations are made on the same basis in different schools and different States.

What are the essential data elements required to supply most of the information needed by State and Federal agencies about Vocational Education and manpower training?

Part 2
Table 122

1. Course Number: The standarized six-digit number developed by the U.S. Office of Education for each course of study at the elementary, secondary, and post-secondary levels.

2. Course Section or Class Identification Number: The number of each section of the same course taught in the local school or educational institution.

3. School or Training Agency Identification Number: The standardized code number developed by the U.S. Office of Education for each school in the United States.

4. School District or Prime Sponsor Identification Number: The standardized code number developed by the U.S. Office of Education for each school district in the United States, or similar unique number for each CETA prime sponsor.

5. Type of Instruction: Institutional, cooperative, or work experience.

6. Federal Support Program: The part or parts of the Federal legislation of 1968, or the Comprehensive Employment Training Act, under which a particular course is receiving Federal assistance.

7. Purpose: Orientation, exploratory, preparatory, or supplementary.

8. Type of Course or Section: Regular, disadvantaged, handicapped, or disadvantaged and handicapped.

9. Course Instructional Level: Grades 7-14, apprentice, adult, or ungraded.

10. Course Instructional Time: Actual clock hours of instruction in each section of a course.

11. Direct Cost: Expenditures which can be identified with each section of a course such as the teacher's salary, supplies, and equipment.

12. Indirect Cost: A prorated share of the school's expenses which cannot be identified with any particular section of a course such as

administrative costs, capital expenditures, and utilities.

13. Local Cost: Any portion of the direct or indirect costs not provided through the State educational agency or from the Federal Government.

14. State and Federal Cost: Any portion of the direct or indirect costs which come from the State educational agency and the Federal Government.

15. Student File Number: A unique number assigned to each student's file either by the local school or by the State educational agency. It is not the student's school identification number or Social Security number.

16. Student Sex: Male or female.

17. Student Age: Date of birth.

18. Student Grade Level: 7-14, apprentice, adult, or ungraded.

19. Type of Student: Regular, handicapped, disadvantaged, or disadvantaged and handicapped.

20. Student Ethnic Group: American Indian, Negro, Oriental, Spanish-surnamed American, or Other.

21. Student Home ZIP Code: Standard U.S. postal ZIP code.

22. Student End of Course Status: Left prior to end of course without a marketable skill, left prior to end of course with a marketable skill, completed course early by examination or advance credit, or completed normal course requirements.

23. Student Achievement: Upper third, middle third, or lower third of class.

24. Student Vocational Club Membership: FFA, FHA, DECA, VICA, etc.

25. Former Student Employment Status after Leaving: Unknown; not available for placement because of military service or personal choice; continuing full-time in vocational or technical education at a higher level; continuing full-time in a non-related post-secondary program; employed full-time in field for which trained or related field; employed full-time in non-related field; unemployed or working part-time looking for full-time employment.

26. Former Student Employment Satisfaction: Highly satisfied, satisfied, or not satisfied.

27. Former Student Evaluation of Vocational Preparation: Student's judgment of his or her training after completion -- excellent, good, fair, poor, no value.

28. Former Student Employability: Number of weeks available for work between first job application and first job.

29. Former Student Employment Earnings: Beginning salary earned per hour in field in which trained if employed full-time.

30. Former Student Employer Status: Self-employed, employed by a relative, by a government agency, by a private company, or other.

31. Professional Personnel File Number: A unique identification number assigned by the local school or by the State educational agency. (For classroom teachers, this is the same Teacher Identification Number used with each course file).

32. Professional Personnel Sex: Male or female.

33. Professional Personnel Age: Date of birth.

34. Professional Personnel Ethnic Group: American Indian, Negro, Oriental, Spahish-surnamed American, or Other.

35. Professional Preparation: Highest professional degree earned.

36. Professional Personnel Vocational Experience: Number of calendar years of practical experience.

37. Professional Personnel Vocational Education Experience: Number of school years teaching vocational or occupationally related classes, or other related professional service.

38. Professional Personnel Position Classification: Teacher, administrator, supervisor, coordinator, counselor, or placement officer.

Additional data elements may be added to this list as their need becomes apparent. These are the ones Project Baseline believes cover all general reporting requirements for a highly functional reporting system at the present time.

To what extent are State educational agencies capable at the present time of supplying these essential Vocational Education data elements?

Part 2
Table 122

Thirty-six States can supply some of them. The remaining seventeen States have no automation and are operating manual information systems, which have the problems discussed in the second chapter of Volume II of the Baseline Reports. It is taken as self-evident that automation is the only means by which States can utilize each of the thirty-eight data elements in generating information about their Vocational Education programs. But an automated system is important only in terms of the data it contains. In Table 122 in Part 2 of this report the contents of the automated systems are examined, State by State.

Part 2
Tables
128-130

What evidence is there that the technology is now available to build a National data base using essential data elements?

Two years of field testing of this technology by Project Baseline have been completed. The first year, using 1971-72 data, individual student files with names and identifying numbers deleted were collected on magnetic tape and punch cards from four States. The data elements in these files were converted to a standard record format and coding structure, then used to print out three reports. This year student data were colected from fifteen States and three additional local school districts, and these were processed in basically the same manner.

A considerable number and variety of problems have been encountered, the identity and description of which provide the basis for their solution. None of the problems is caused by failure of the computer technology used; most are the result of ways in which the technology is used by different States and local school districts. In this respect they are administrative and procedural problems requiring administrative and possibly political solutions.

During the second year of field testing, using 1972-73 data, three reports were produced. The data in these reports cannot be used either as representing the States and local school districts from which they were received or as generalizable information of any kind. They were selected only on the basis of availability. The results were further impaired by numerous gaps in the data received and by some data unable to meet the standards of quality and uniformity required for conversion to a common coding structure. Nevertheless, they demonstrate a capability of providing information in this way which the Project Baseline staff is convinced cannot be provided in any other way, certainly not with the same accuracy and timeliness.

One report simply prints out the numbers and percentages of students at each level -- secondary, post-secondary, and adult -- and the total of all levels by sex, ethnic identity, disadvantaged or handicapped or both, grade level, occupational cluster, and end of class status. It does this for each State and for all of the States and local school districts combined. The summary data for all States appear on a single sheet as shown in Table 128 of Part 2 of this report. A single printout sheet of this kind could contain all of the above information for all twelve million Vocational Education students in the United States.

The second report is a printout of followup data showing numbers of students who completed their programs and percentages of those employed both in fields in which trained or related fields, and those employed in non-related fields. The data are further divided into male and female, ethnic groups, and occupational clusters.

For example, the data received from one State -- keeping in mind that they are incomplete -- show forty-three Negro males and forty-five Negro females having completed programs in food service. Of these, 44.2 percent of the males and 37.8 percent of the females -- for a total of 40.9

percent -- were employed in the food service field or a related field. Fourteen percent of the remaining males and no females were employed in non-food service fields. At the same time ninety-six non-ethnic minority males (white) and 102 females completed food service programs, and a total of 45.1 percent of these were employed in that field or a related one. Altogether in all occupational clusters, that State -- keeping in mind again that the data are incomplete -- had employment percentages of students who had completed Vocational Education and were employed in the field in which they were trained, or a related field, of 41.9 percent for Negro males, 37.8 percent for Negro females, 51.3 percent for non-minority males, and 55.2 percent for non-minority females.

These are all percentages of those who completed occupational programs. The numbers and percentages of those who were available for work -- leaving out Vocational Education students who were continuing their education or not available for other reasons -- could just as easily have been included. With complete data, these would be actual employment rates of Vocational Education students by State, sex, ethnic identity, and occupational cluster.

Only the combined data received and usable from eighteen States and local agencies are shown in this report, Table 129. If the same original source data elements -- sex, occupational cluster, ethnic identity, and employment status -- were available for all Vocational Education students who had completed their programs in every State, this printout could contain the numbers and percentages described above for a total of 1,920,131 persons throughout the Nation and those in each State in the fall of 1973.

The third printout uses demographic data from the U.S. Bureau of the Census by ZIP code, combined with Vocational Education completion and employment data by ethnic group and sex. The table itself has very little data because very few student ZIP codes were available in Vocational Education files. It does demonstrate the procedure, however, and student ZIP codes would present no great problem if the educational agencies were given a reason to include them in the data stored for each student.

The information printed out in Table 130, if it were complete, would show what percent of all Vocational Education students enrolled completed their programs or left with job entry skills, and the percentages of Negro and of Spanish-surnamed students who did so. It would show the percentages of each group who were employed in their fields or related fields, and who were employed in any field.

Reading across Table 130, the percentages of males and females in those groups are shown separately. Finally, it shows males and females who live in each of the following ZIP code areas: those with fifty percent or more Negroes; those with fifty percent or more Spanish-surnamed Americans; those with average family income below $5,000; and those where the forty-five through fifty-four year age group has an education no higher than grade eight.

If the ZIP codes of all Vocational Education students in the U.S. were available, together with their ethnic identity, sex, end of class status, and employment status, Congress and the U.S. Office of Education could

get a very clear picture of what Vocational Education was doing for these people. Table 130, if it contained complete data, would also provide much more reliable information about the impact of Vocational Education on the disadvantaged than anything the States or Federal agencies have yet been able to obtain. And it is only a single example of the scores of separate analyses which could be made by agencies at the Federal level and in each State from the thirty-eight data elements discussed earlier in this report.

Part 2
Sect. IV

## What are the advantages and disadvantages of collecting data on the basis of individual student records?

There are basically three advantages: (1) Accuracy. The data would be as accurate as the records themselves. (2) Timeliness. When data are stored in machine readable form, it takes only a fraction of the time to copy them by computer that it would take to copy them by hand. Even great quantities of data in millions of files can be copied much faster by computer than can be copied, tabulated, and copied again by hand. Tabulated data can, of course, be handled by computer also, but the flow of information from source to final printout through multiple constraining levels of tabulation is far more time-consuming than when individual data records are used. (3) Flexibility. Data from individual student records make possible any number of separate analyses, any number of combinations, any number of comparisons at each level up to and including the Federal Government. They are capable of answering almost any number of questions without the questions having to be asked before the data are collected.

There are disadvantages, however, and at the present time they would make the collection of this kind of data extremely difficult at the Federal level.

The major disadvantage seems to be cost. Initial data processing equipment and staffing costs are relatively high, and operational costs are considerably higher than for handling data manually. As noted earlier, however, more than half the States have given these expenditures the necessary priority to establish automated information systems. A large number of local school districts have done the same. Cost apparently is not prohibitive, and it might be less than feared if automation of many institutions and agencies were coordinated through joint use of equipment and technical staff.

The second disadvantage, self-imposed, is quite serious. This is the widespread lack of standardization in terms, definitions, and coding used in the record-keeping process. Many definitions have been standardized by the U.S. Office of Education, the National Bureau of Standards, and the Council of Chief State School Officers in a series of manuals published during the past decade. Unfortunately, they are not being used by large numbers of schools, or by the States themselves.

A third, related disadvantage is the wide variety of record-keeping procedures used by local schools and State agencies. Sources of data, times of collection, methods of posting, descriptor and connecting file

codes, and disposal practices after files become inactive are different in some respects in virtually every separate educational institution or agency.

Another disadvantage is that some of the data greatly needed are not being collected at all. An example is the failure of most school districts to collect student characteristics, or even postal ZIP codes, through which home neighborhood socio-economic data can be obtained from the U.S. Bureau of the Census.

Obviously, the policies on collection of data for individual student records must be dealt with primarily at the local school district level. The States, however, have a great deal of influence or control over local school record-keeping policies, through either State Departments of Education or State legislatures or both. And if it should seem advisable, the Federal Government could exercize considerably more authority than heretofore in the record-keeping requirements it attaches to Federal support programs.

APPENDIX A

National Summary: Vocational Education
Fiscal Years 1971 Through 1973

Total Enrollment in Vocational Education. The total enrollment in Vocational Education in 1970-71 was 10,485,255. In 1971-72, the total enrollment increased 10.54 percent to 11,589,949. The enrollment increased 4.10 percent in 1972-73 for a total of 12,064,761. The total increase in enrollment in Vocational Education in the three-year period from 1970-71 to 1972-73 was 15.06 percent.

Secondary Vocational Education. In 1970-71, the enrollment in secondary Vocational Education was 6,487,566. In 1971-72, the enrollment increased 11.33 percent to 7,222,867. In 1972-73, the enrollment in secondary Vocational Education increased 1.74 percent to 7,348,666. The total increase in the enrollment in secondary Vocational Education in the three-year period from 1970-71 to 1972-73 was 13.27 percent.

Post-Secondary Vocational Education. In 1970-71, the total enrollment in post-secondary Vocational Education was 1,140,250. In 1971-72, the enrollment in post-secondary Vocational Education increased 14.28 percent to 1,303,052. In 1972-73, the enrollment in post-secondary Vocational Education increased 3.56 percent to 1,349,465. The total increase in the enrollment in post-secondary Vocational Education in the three-year period from 1970-71 to 1972-73 was 18.35 percent.

Adult Vocational Education. In 1970-71, the enrollment in adult Vocational Education was 2,857,439. In 1971-72, the enrollment increased 7.23 percent to 3,064,030. In 1972-73, the enrollment in adult Vocational Education increased 9.88 percent to 3,366,630. The total change in the enrollment in adult Vocational Education in the three-year period from 1970-71 to 1972-73 was an increase of 17.82 percent.

Total Vocational Education Enrollment Related to Population. In 1970-71, Vocational Education enrolled 50.85 persons out of each 1,000 of the general population. In 1971-72, the enrollment per 1,000 general population increased 9.46 percent for a total of 55.66 persons per 1,000. The enrollment in Vocational Education per 1,000 population in 1972-73 increased 3.54 percent for a total of 57.63. Total change in enrollment per 1,000 general population over the three-year period from 1970-71 to 1972-73 was an increase of 13.33 percent.

Secondary Vocational Education Related to Population. In 1970-71, secondary Vocational Education enrolled 34.02 percent of the population 15-19 years of age. In 1971-72, the enrollment as a percent of the population increased 3.85 percentage points to include 37.87 percent of the population group. In 1972-73, the enrollment increased 0.66 percentage points for a total of 38.53 percent of the population 15-19 years of age.

Total change in secondary enrollment as a percent of the population 15-19 years of age over the three-year period from 1970-71 to 1972-73 was an increase of 4.51 percentage points.

Post-secondary Vocational Education Related to Population. In 1970-71, post-secondary Vocational Education enrolled 6.6 percent of the population 20-24 years of age. In 1971-72, the enrollment as a percent of the population 20-24 years of age increased 1.26 percentage points for a total of 7.86 percent. The enrollment in post-secondary Vocational Education as a percent of the population 20-24 years of age in 1972-73 increased 0.38 percentage points for a total of 8.24 percent. Total change in post-secondary enrollment as a percent of the population 20-24 years of age over the three-year period from 1970-71 to 1972-73 was an increase of 1.64 percentage points.

Adult Vocational Education Related to Population. In 1970-71, adult Vocational Education enrolled 3.1 percent of the population age 25-64. In 1971-72, the enrollment percent increased 0.28 percentage points for a total of 3.38 percent of the population 25-64 years of age. The enrollment in adult Vocational Education as a percent of the population 25-64 years of age in 1972-73 increased 0.37 percentage points for a total of 3.75 percent. Total change in adult enrollment as a percent of the population 25-64 years of age over the three-year period from 1970-71 to 1972-73 was an increase of 0.65 percentage points.

Cooperative Vocational Education. In 1970-71, cooperative Vocational Education enrolled 4.96 percent of the total number of persons enrolled in secondary and post-secondary Vocational Education. In 1971-72, cooperative Vocational Education enrolled 5.27 percent of the total number of persons enrolled in secondary and post-secondary Vocational Education; this was an increase of 0.31 percentage points. In 1972-73, cooperative Vocational Education enrolled 5.73 percent of the total number of persons enrolled in secondary and post-secondary Vocational Education; this was an increase of 0.46 percentage points. For the three-year period 1970-71 to 1972-73, cooperative Vocational Education, as a percent of total enrollment in secondary and post-secondary Vocational Education, increased 0.77 percentage points.

Work Study Vocational Education. In 1970-71, work study Vocational Education enrolled 0.38 percent of the total number of persons enrolled in secondary and post-secondary Vocational Education. In 1971-72, work study Vocational Education enrolled 0.37 percent of the total number of persons enrolled in secondary and post-secondary Vocational Education; this was a decrease of 0.01 percentage point from the previous year. In 1972-73, work study Vocational Education enrolled 0.39 percent of the total number of persons enrolled in secondary and post-secondary Vocational Education; this was an increase of 0.02 percentage points from 1971-72. For the three-year period, 1970-71 to 1972-73, work study Vocational Education, as a percent of total enrollment in secondary and post-secondary Vocational Education, increased 0.01 percentage point.

Enrollment of Disadvantaged Persons. The enrollment of disadvantaged persons in 1970-71 was 1,388,428. In 1971-72, the enrollment was 1,608,187

which was an increase of 15.83 percent compared to the previous year's enrollment of disadvantaged persons. As a percent of total Vocational Education enrollment, disadvantaged persons enrollment increased 0.64 percentage points. In 1972-73, the enrollment of disadvantaged persons was 1,581,025 which was a decrease of 1.69 percent compared to the previous year's enrollment of disadvantaged persons. As a percent of total Vocational Education, disadvantaged persons enrollment decreased 0.78 percentage points. The enrollment of disadvantaged persons in 1972-73 increased 13.87 percent compared to enrollment of disadvantaged persons in 1970-71. When enrollment of disadvantaged persons for this period is compared to total Vocational Education enrollment, it decreased 0.14 percentage points.

Enrollment of Handicapped Persons. The enrollment of handicapped persons in 1970-71 was 202,910. In 1971-72, the enrollment was 221,295 which was an increase of 9.06 percent compared to the previous year's enrollment of handicapped persons. As a percent of total Vocational Education enrollment, handicapped persons enrollment decreased 0.03 percentage points. In 1972-73, the enrollment of handicapped persons was 222,713 which was an increase of 0.64 percent compared to the previous year's enrollment of handicapped persons. As a percent of total Vocational Education, handicapped persons enrollment decreased 0.06 percentage points. The enrollment of handicapped persons in 1972-73 increased 9.76 percent compared to enrollment of handicapped persons in 1970-71. When enrollment of handicapped persons for this period is compared to total Vocational Education enrollment, it decreased 0.09 percentage points.

Agriculture Education. The enrollment in agriculture education in 1970-71 was 844,505. In 1971-72, the enrollment was 895,866 which was an increase of 6.08 percent compared to the previous year's agriculture education enrollment. As a percent of total Vocational Education enrollment, agriculture education enrollment decreased 0.36 percentage points. In 1972-73, the enrollment in agriculture education was 927,141 which was an increase of 3.49 percent compared to the previous year's agriculture education enrollment. As a percent of total Vocational Education, agriculture education enrollment decreased 0.07 percentage points. During the three years, the enrollment in agriculture education increased 9.79 percent. As a percent of total enrollment in Vocational Education, enrollment in agriculture education decreased 0.43 percentage points.

Distributive Education. The enrollment in distributive education in 1970-71 was 578,066. In 1971-72, the enrollment was 640,122 which was an increase of 10.74 percent compared to the previous year's distributive education enrollment. As a percent of total Vocational Education enrollment, distributive education enrollment decreased 0.02 percentage points. In 1972-73, the enrollment in distributive education was 738,449 which was an increase of 15.36 percent compared to the previous year's distributive education enrollment. As a percent of total Vocational Education, distributive education enrollment increased 0.57 percentage points. During the three years, the enrollment in distributive education increased 27.74 percent. As a percent of total enrollment in Vocational Education, enrollment in distributive education increased 0.55 percentage points.

Health Occupations Education. The enrollment in health occupations

education in 1970-71 was 269,495. In 1971-72, the enrollment was 336,611 which was an increase of 24.90 percent compared to the previous year's health occupations education enrollment. As a percent of total Vocational Education enrollment, health occupations education enrollment increased 0.32 percentage points. In 1972-73, the enrollment in health occupations education was 421,008 which was an increase of 25.07 percent compared to the previous year's health occupations education enrollment. As a percent of total Vocational Education, health occupations education enrollment increased 0.57 percentage points. During the three years, the enrollment in health occupations education increased 56.22 percent. As a percent of total enrollment in Vocational Education, enrollment in health occupations education increased 0.89 percentage points.

Consumer and Homemaking Education. The enrollment in consumer and homemaking education in 1970-71 was 2,929,641. In 1971-72, the enrollment was 3,162,732 which was an increase of 7.96 percent compared to the previous year's consumer and homemaking education enrollment. As a percent of total Vocational Education enrollment, consumer and homemaking education enrollment decreased 0.79 percentage points. In 1972-73, the enrollment in consumer and homemaking education was 3,186,476 which was an increase of 0.75 percent compared to the previous year's consumer and homemaking education enrollment. As a percent of total Vocational Education, consumer and homemaking education enrollment decreased 0.97 percentage points. During the three years, the enrollment in consumer and homemaking education increased 8.77 percent. As a percent of total enrollment in Vocational Education, enrollment in consumer and homemaking education decreased 1.76 percentage points.

Occupational Home Economics Education. The enrollment in occupational home economics in 1970-71 was 196,816. In 1971-72, the enrollment was 279,118 which was an increase of 41.82 percent compared to the previous year's occupational home economics education enrollment. As a percent of total Vocational Education enrollment, occupational home economics education enrollment increased 0.52 percentage points. In 1972-73, the enrollment in occupational home economics education was 322,696 which was an increase of 15.61 percent compared to the previous year's occupational home economics education enrollment. As a percent of total Vocational Education, occupational home economics education enrollment increased 0.26 percentage points. During the three years, the enrollment in occupational home economics education increased 63.96 percent. As a percent of total enrollment in Vocational Education, enrollment in occupational home economics education increased 0.78 percentage points.

Office Occupations Education. The enrollment in office occupations education in 1970-71 was 2,224,901. In 1971-72, the enrollment was 2,349,977 which was an increase of 5.62 percent compared to the previous year's office occupations education enrollment. As a percent of total Vocational Education enrollment, office occupations education enrollment decreased 1.04 percentage points. In 1972-73, the enrollment in office occupations education was 2,497,558 which was an increase of 6.28 percent compared to the previous year's office occupations education enrollment. As a percent of total Vocational Education, office occupations education enrollment increased 0.35 percentage points. During the three years, the enrollment in office occupations education increased 12.25 percent. As a

percent of total enrollment in Vocational Education, enrollment in office occupations education decreased 0.69 percentage points.

Technical Education. The enrollment in technical education in 1970-71 was 313,692. In 1971-72, the enrollment was 336,639 which was an increase of 7.32 percent compared to the previous year's technical education enrollment. As a percent of total Vocational Education enrollment, technical education enrollment decreased 0.10 percentage points. In 1972-73, the enrollment in technical education was 363,909 which was an increase of 8.10 percent compared to the previous year's technical education enrollment. As a percent of total Vocational Education, technical education enrollment increased 0.10 percentage points. During the three years, the enrollment in technical education increased 16.01 percent. As a percent of total enrollment in Vocational Education, enrollment in technical education did not change.

Trade and Industrial Education. The enrollment in trade and industrial education in 1970-71 was 2,072,502. In 1971-72, the enrollment was 2,394,334 which was an increase of 15.53 percent compared to the previous year's trade and industrial education enrollment. As a percent of total Vocational Education enrollment, trade and industrial education enrollment increased 0.79 percentage points. In 1972-73, the enrollment in trade and industrial education was 2,695,726 which was an increase of 12.59 percent compared to the previous year's trade and industrial education enrollment. As a percent of total Vocational Education, trade and industrial education enrollment increased 1.60 percentage points. During the three years, the enrollment in trade and industrial education increased 30.07 percent. As a percent of total enrollment in Vocational Education, enrollment in trade and industrial education increased 2.39 percentage points.

Negroes. In 1970-71, the enrollment of Negroes was 18.95 percent of the total enrollment in Vocational Education. This was 7.84 percentage points greater than the 11.11 percent of the general population which was Negro. In 1971-72, the enrollment of Negroes was 16.61 percent of the total enrollment in Vocational Education. This was 5.50 percentage points greater than the 11.11 percent of the general population which was Negro. In 1972-73, the enrollment of Negroes in Vocational Education could not be determined for all States because the U.S. Office of Education stopped requiring this information. But, in fifteen States from which data were available for 1972-73, the enrollment of Negroes was 15.92 percent of the total enrollment in Vocational Education. This was 4.12 percentage points greater than the 11.80 percent of the general population which was Negro.

American Indians. In 1970-71, the enrollment of American Indians was 0.49 percent of the total enrollment in Vocational Education. This was 0.10 percentage points greater than the 0.39 percent of the general population which was American Indian. In 1971-72, the enrollment of American Indians was 0.84 percent of the total enrollment in Vocational Education. This was 0.45 percentage points more than the 0.39 percent of the general population which was American Indian. In 1972-73, the enrollment of American Indians in Vocational Education could not be determined for all States because the U.S. Office of Education stopped requiring this information. But, in fifteen States from which data were available

for 1972-73, the enrollment of American Indians was 2.08 percent of the total enrollment in Vocational Education. This was 1.75 percentage points greater than the 0.33 percent of the general population which was American Indian.

Orientals. In 1970-71, the enrollment of Orientals was 0.70 percent of the total enrollment in Vocational Education. This was 0.19 percentage points greater than the 0.51 percent of the general population which was Oriental. In 1971-72, the enrollment of Orientals was 1.00 percent of the total enrollment in Vocational Education. This was 0.49 percentage points greater than the 0.51 percent of the general population which was Oriental. In 1972-73, the enrollment of Orientals in Vocational Education could not be determined for all States because the U.S. Office of Education stopped requiring this information. But, in fifteen States from which data were available for 1972-73, the enrollment of Orientals was 0.21 percent of the total enrollment in Vocational Education. This was the same as the 0.21 percent of the general population which was Oriental.

Spanish-surnamed. In 1970-71, the enrollment of Spanish-surnamed persons was 5.89 percent of the total enrollment in Vocational Education. In 1971-72, the enrollment of Spanish-surnamed persons was 6.06 percent of the total enrollment in Vocational Education. In 1972-73, the enrollment of Spanish-surnamed persons in Vocational Education could not be determined for all States because the U.S. Office of Education stopped requiring this information. But, in fifteen States from which data were available for 1972-73, the enrollment of Spanish-surnamed Americans was 3.89 percent of the total enrollment in Vocational Education. Total population figures for Spanish-surnamed Americans were not available from the U.S. Bureau of the Census.

Others. In 1970-71, the enrollment of other persons was 73.76 percent of the total enrollment in Vocational Education. This was 14.23 percentage points less than the 87.99 percent of the general population which were other persons. In 1971-72, the enrollment of other persons was 85.30 percent of the total enrollment in Vocational Education. This was 2.69 percentage points less than the 87.99 percent of the general population which were other persons. In 1972-73, the enrollment of other persons in Vocational Education could not be determined for all States because the U.S. Office of Education stopped requiring this information. But, in fifteen States from which data were available for 1972-73, the enrollment of other persons was 77.90 percent of the total enrollment in Vocational Education. This was 9.76 percentage points less than the 87.66 percent of the general population which were other persons.

Female and Male. In 1970-71, females constituted 55.4 percent of the total enrollment in Vocational Education; conversely, males constituted 44.6 percent of the total enrollment. In 1971-72, females constituted 55.5 percent of the total enrollment in Vocational Education; conversely, males consituted 44.5 percent. The percentage point change in the balance of females to males was 0.1. In 1972-73, males and females in Vocational Education could not be determined for all States because the U.S. Office of Education stopped requiring this information. But, in nine States from which data were available in 1972-73, females constituted 56.2 percent of the total enrollment in Vocational Education;

conversely, males contituted 43.8 percent of the total enrollment.

Total Reported Dollar Expenditures in Vocational Education, All Levels. In 1970-71 the total reported expenditure for all levels of Vocational Education (including Federal, State, and local monies) was $2,399,025,018. In 1971-72, the total reported expenditure increased to $2,654,338,633. The total reported expenditure for all levels of Vocational Education increased to $3,026,027,939 in 1972-73.

Total Reported Expenditure Per Student in Vocational Education, All Levels. The total reported expenditure per student in Vocational Education (or the average expenditure per student, including all levels and all programs) in 1970-71 was $228.79. In 1971-72, the average reported expenditure per student increased to $229.02. In 1972-73, the average reported expenditure per student increased to $250.82.

Total Reported Expenditure Per Student in Secondary Vocational Education. The total, or average, reported expenditure per student in secondary Vocational Education in 1970-71 was $238.18; this included Federal, State and local monies as well as all secondary programs. In 1971-72, the average reported expenditure per student in secondary Vocational Education increased to $241.45. In 1972-73, the average reported expenditure per student in secondary Vocational Education increased to $270.13.

Total Reported Expenditure Per Student in Post-secondary Vocational Education. The total, or average, reported expenditure (including Federal, State and local monies) per student in post-secondary Vocational Education in 1970-71 was $534.00; this included all programs at the post-secondary level. In 1971-72, the average reported expenditure per student increased to $538.15. The average reported expenditure in 1972-73 increased to $623.28.

Total Reported Expenditure Per Student in Adult Vocational Education. In 1970-71, the total, or average, reported expenditure (including Federal, State and local monies) per student in adult Vocational Education was $75.00; this included all programs at the adult level. In 1971-72, the total, or average, reported expenditure per student in adult Vocational Education decreased to $64.49. In 1972-73, the average reported expenditure decreased to $56.58 per student.

Reported Expenditure for Disadvantaged Persons. In 1970-71, the reported expenditure for disadvantaged persons in Vocational Education was $229,837,957 which was 9.6 percent of the total reported expenditure in Vocational Education. In 1971-72, the reported expenditure for disadvantaged persons was $286,786,154; this dollar expenditure represented 10.8 percent of the total reported expenditure for Vocational Education and was an increase of 1.2 percentage points. In 1972-73, the reported expenditure for disadvantaged persons was $318,694,933; this dollar expenditure represented 10.5 percent of the total reported expenditure for Vocational Education and was a decrease of 0.3 percentage points. Over the three-year period from 1970-71 to 1972-73, the reported expenditure for disadvantaged persons increased 0.9 percentage points as a part of the total reported expenditure for Vocational Education.

Reported Expenditure for Handicapped Persons. In 1970-71, the reported expenditure for handicapped persons in Vocational Education was $62,424,962 which was 2.6 percent of the total reported expenditure in Vocational Education. In 1971-72, the reported expenditure for handicapped persons was $66,138,395; this dollar expenditure represented 2.5 percent of the total reported expenditure for Vocational Education and was a decrease of 0.1 percentage point. In 1972-73, the reported expenditure for handicapped persons was $94,150,830; this dollar expenditure represented 3.1 percent of the total reported expenditure for Vocational Education and was an increase of 0.6 percentage points. Over the three-year period from 1970-71 to 1972-73, the reported expenditure for handicapped persons increased 0.5 percentage points as a part of the total reported expenditure for Vocational Education.

Ratio of Reported State and Local Expenditures to Federal Expenditures. In 1970-71, reported State and local expenditures for Vocational Education were $2,005,098,155, while expenditure of Federal monies was $393,926,863; the ratio of reported expenditure of State and local monies to Federal monies was $5.09:1. In 1971-72, the reported expenditure of State and local monies was $2,189,851,173, while expenditure of Federal monies was $464,487,460; the resulting ratio was $4.71:1. In 1972-73, the reported expenditure of State and local monies totaled $2,546,302,142, while expenditure of Federal monies was $479,725,797; the ratio of expenditure of State and local monies to Federal monies was $5.31:1.

Placement of All Persons Receiving Vocational Education, At All Levels. While the paragraphs below provide additional detail about the three years under study, employment of persons who received Vocational Education, at all levels, can be summarized as follows:

> The number of persons employed as a percent of the combined number of completers and early leavers was 42.94 percent in 1971, 50.92 percent in 1972, and 49.02 percent in 1973.
>
> The number of persons employed as a percent of all persons available for work was 84.79 percent in 1971, 94.05 percent in 1972, and 91.07 percent in 1973.

In 1970-71, the total number of persons completing a Vocational Education program (completers) was 1,441,635; the total number of persons who left prior to completion time with marketable skills (early leavers) was 106,283. Of these two groups, 783,923 were known to be available for placement. Of all completers and early leavers, a followup determined that 42.94 percent were employed. Of the total persons who were available for work, 84.79 percent were employed.

In 1971-72, the total number of persons completing a Vocational Education program was 1,560,145; the total number of persons who left prior to completion time with marketable skills was 137,022. Of these two groups, 918,808 were known to be available for placement. Of all completers and early leavers, a followup determined that 50.92 percent were employed. Of persons who were available for work, 94.05 percent were employed.

In 1972-73, the total number of persons completing a Vocational Education program was 1,809,754; the total number of persons who left prior to completion time with marketable skills was 110,377.* Of these two groups 1,053,483 were known to be available for placement. Of all completers and early leavers, a followup determined that 49.02 percent were employed. Of persons who were available for work, 91.07 percent were employed.

Placement of All Persons Receiving Secondary Vocational Education. In 1970-71, the number of persons completing a secondary Vocational Education program, (completers) was 997,539; the number of persons who left prior to completion time with marketable skills (early leavers) was 38,194. Of these two groups, 505,965 were known to be available for placement. Of all completers and early leavers, a followup determined that 42.39 percent were employed. Of persons who were available for work, 86.76 percent were employed.

In 1971-72, the number of persons completing a secondary Vocational Education program was 1,027,349; the number of persons who left prior to completion time with marketable skills was 40,145. Of these two groups, 533,973 were known to be available for placement. Of all completers and early leavers, a followup determined that 46.99 percent were employed. Of persons who were available for work, 93.95 percent were employed.

In 1972-73, the number of persons completing a secondary Vocational Education program was 1,063,251; the number of persons who left prior to completion time with marketable skills was not available.* Of the completers, 562,828 were known to be available for placement. Of persons who were available for work, a followup determined that 89.98 percent were employed.

Placement of All Persons Receiving Post-secondary Vocational Education. In 1970-71, the number of persons completing a post-secondary Vocational Education program (completers) was 304,144; the number of persons who left prior to completion time with marketable skills (early leavers) was 59,397. Of these two groups, 195,039 were known to be available for placement. Of all completers and early leavers, a followup determined that 49.85 percent were employed. Of persons who were available for work, 92.91 percent were employed.

In 1971-72, the number of persons completing a post-secondary Vocational Education program was 341,682; the number of persons who left prior to completion time with marketable skills was 80,503. Of these two groups, 256,174 were known to be available for placement. Of all completers and early leavers, a followup determined that 57.29 percent were employed. Of persons who were available for work, 94.41 percent were employed.

In 1972-73, the number of persons completing a post-secondary Vocational Education program was 401,887; the number of persons who left

* In 1972-73 early leavers with marketable skills were available by State totals. No breakout by level was available.

prior to completion time with marketable skills was not available. Of the completers, 274,745 were known to be available for placement. Of persons who were available for work, a followup determined that 92.88 percent were employed.

Placement of Persons Receiving Preparatory Adult Vocational Education. In 1970-71, the number of persons completing an adult Vocational Education program (completers) was 137,251; the number of persons who left prior to completion time with marketable skills (early leavers) was 10,696. Of these two groups, 82,919 were known to be available for placement. Of all completers and early leavers, a followup determined that 48.88 percent were employed. Of persons who were available for work, 87.21 percent were employed.

In 1971-72, the number of persons completing an adult Vocational Education program was 197,125; the number of persons who left prior to completion time with marketable skills was 14,853. Of these two groups, 132,929 were known to be available for placement. Of all completers and early leavers, a followup determined that 58.63 percent were employed. Of persons who were available for work, 93.49 percent were employed.

In 1972-73, the number of persons completing an adult Vocational Education program was 344,616; the number of persons who left prior to completion time with marketable skills was not available. Of the completers, 195,910 were known to be available for placement. Of persons who were available for work, a followup determined that 91.65 percent were employed.

National Summary: Manpower Training
Fiscal Years 1971 Through 1973

Programs administered by the U.S. Department of Labor can be categorized a number of ways, such as occupationally reported, basic education, and subsistence. In the paragraphs which follow, only those programs are reported which focus on training for employment (occupationally reported). The data available are only partially complete due to problems in the Manpower Administration's reporting system. They are the only data which could be obtained at any level representing actual enrollment by program within each State.

Total Enrollment in Occupationally Reported Programs, Including MDTA Programs and EOA Programs. The total enrollment in occupationally reported U.S. Department of Labor programs in 1970-71 was 432,027. In 1971-72, the enrollment decreased to 346,066 persons. The enrollment decreased in 1972-73 to 149,593 persons.

Total Enrollment in MDTA Programs. The total enrollment in MDTA programs in 1970-71 was 179,483. In 1971-72, the enrollment increased to 209,269. In 1972-73, the total enrollment in MDTA programs decreased to 85,962.

MDTA Institutional Enrollment. The enrollment in MDTA Insitutional programs in 1970-71 was 133,908. In 1971-72, the enrollment decreased to 132,736. The enrollment decreased to 75,417 in 1972-73.

MDTA On-Job-Training Enrollment. In 1970-71, the enrollment in MDTA On-Job-Training was 45,575. In 1971-72, the enrollment decreased to 16,560. The enrollment decreased to 10,545 in 1972-73.

MDTA Part-Time Enrollment. In 1971-72, (the only year for which data were available) the enrollment in MDTA Part-Time programs was 4,373 persons.

MDTA Job Opportunities in Business (JOP) Enrollment: Entry. In 1971-72, (the only year for which data were available) the enrollment in MDTA-JOP Entry programs was 51,152 persons.

MDTA Job Opportunities in Business (JOP) Enrollment: Upgrade. In 1971-72, (the only year for which data were available) the enrollment in MDTA-JOP Upgrade was 4,448.

Total Enrollment in EOA Occupationally Reported Programs. The total enrollment in EOA programs in 1970-71 was 252,544. In 1971-72, the enrollment decreased to 136,797 persons. In 1972-73, the total enrollment in EOA programs decreased to 63,631.

Work Incentive (WIN) Enrollment. The enrollment in the WIN program in 1970-71 was 110,080. In 1971-72, the enrollment decreased to 37,360. Enrollment data were not available for 1972-73.

Concentrated Employment Program (CEP) Enrollment. The CEP enrollment in 1970-71 was 67,792 persons. In 1971-72, the enrollment decreased to 42,442. In 1972-73, the enrollment in CEP decreased to 25,645 persons.

Neighborhood Youth Corps (NYC) Enrollment. In 1970-71, the enrollment in the NYC program was 42,534. In 1971-72, the enrollment decreased to 38,110. The enrollment in the NYC program in 1972-73 decreased to 20,908 persons.

Operation Mainstream Enrollment. In 1970-71, the enrollment was 10,556 persons in Operation Mainstream programs. In 1971-72, the enrollment decreased to 10,302 persons. The enrollment decreased to 9,633 persons in 1972-73.

Public Service Careers (PSC) Enrollment. In 1970-71, the enrollment in Public Service Careers was 4,727. In 1971-72, the enrollment increased to 8,583 persons. The enrollment decreased to 6,016 persons in 1972-73.

Occupational Industrialization Centers (OIC) Enrollment. In 1970-71, the enrollment in OIC programs was 16,855 persons. Data were not available for 1971-72. In 1972-73, the enrollment decreased to 1,429 persons.

Enrollment of Negroes in Occupationally Reported U.S. Department of Labor Training Programs. In 1970-71, the enrollment of Negroes was 32.00 percent of the total enrollment in U.S. Department of Labor training programs. This was 20.89 percentage points more than the 11.11 percent of the general population which was Negro. In 1971-72, the enrollment of Negroes was 33.14 percent of the total enrollment in U.S. Department of Labor training programs. This was 22.03 percentage points more than the 11.11 percent of the general population which was Negro. In 1972-73, the enrollment of Negroes was 34.64 percent of the total enrollment in U.S. Department of Labor training programs. This was 23.53 percentage points more than the 11.11 percent of the general population which was Negro.

Enrollment of American Indians in Occupationally Reported U.S. Department of Labor Training Programs. In 1970-71, the enrollment of American Indians was 2.47 percent of the total enrollment in U.S. Department of Labor training programs. This was 2.08 percentage points more than the 0.39 percent of the general population which was American Indian. In 1971-72, the enrollment of American Indians was 2.63 percent of the total enrollment in U.S. Department of Labor training programs. This was 2.24 percentage points more than the 0.39 percent of the general population which was American Indian. In 1972-73, the enrollment of American Indians was 3.34 percent of the total enrollment in U.S. Department of Labor training programs. This was 2.95 percentage points more than the 0.39 percent of the general population which was American Indian.

Enrollment of Orientals in Occupationally Reported U.S. Department of Labor Training Programs. In 1970-71, the enrollment of Orientals was 0.46 percent of the total enrollment in U.S. Department of Labor training programs. This was 0.05 percentage points less than the 0.51 percent of the general population which was Oriental. In 1971-72, the enrollment of Orientals was 0.48 percent of the total enrollment in U.S. Department of Labor training programs. This was 0.03 percentage points less than the

0.51 percent of the general population which was Oriental. In 1972-73, the enrollment of Orientals was 0.65 percent of the total enrollment in U.S. Department of Labor training programs. This was 0.14 percentage points more than the 0.51 percent of the general population which was Oriental.

Enrollment of the Spanish-surnamed in Occupationally Reported U.S. Department of Labor Training Programs. Programs administered by the U.S. Department of Labor do not report the enrollment of Spanish-surnamed persons as a separate group.

Enrollment of Others in Occupationally Reported U.S. Department of Labor Training Programs. The term "other" as used in the following paragraph refers to persons and groups other than those previously identified as a racial or ethnic minority. Consequently, the "other" group is made up of several, such as the Spanish-surnamed and the white or Caucasian majority.

In 1970-71, the enrollment of others was 62.89 percent of the total enrollment in U.S. Department of Labor training programs. This was 25.10 percentage points less than the 87.99 percent of the general population which was other. In 1971-72, the enrollment of others was 63.74 percent of the total enrollment in U.S. Department of Labor training programs. This was 24.25 percentage points less than the 87.99 percent of the general population which was other. In 1972-73, the enrollment of others was 61.37 percent of the total enrollment in U.S. Department of Labor training programs. This was 26.62 percentage points less than the 87.99 percent of the general population which was other.

Average Federal Allocation Per Trainee In Occupationally Reported MDTA Programs. The Federal allocation for MDTA programs, when divided by the number of trainees, resulted in an average of $1,875.00 per trainee in 1970-71. In 1971-72, the average per trainee was $2,028.74, which was an increase of $153.74 per trainee. In 1972-73, the average per trainee was $4,430.00 which increased from the previous year by $2,401.26. Over the three-year period from 1970-71 to 1972-73, the Federal allocation for MDTA, when divided by the number of trainees, increased an average of $2,555.00 per trainee.

Average Federal Allocation Per Trainee In Occupationally Reported EOA Programs. The Federal allocation for EOA programs, when divided by the number of trainees, resulted in an average of $2,173.00 per trainee in 1970-71. In 1971-72, the average per trainee was $4,326.24, which was an increase of $2,153.24 per trainee. In 1972-73, the average per trainee was $6,490.42 which increased from the previous year by $2,164.18. Over the three-year period from 1970-71 to 1972-73, the Federal allocation for EOA, when divided by the number of trainees, increased an average of $4,317.42 per trainee.

Enrollment in Vocational Education and Manpower Programs. In the following paragraph, the term "manpower" refers to enrollments which have been combined, or MDTA programs and EOA programs.

In 1970-71, the total enrollment in Federally reported programs, including Vocational Education and manpower, was 10,917,282. Of the total,

Vocational Education enrolled 10,485,255 or 96.04 percent and manpower enrolled 423,027 or 3.96 percent. In 1971-72, the total enrollment in Federally reported programs was 11,936,015 persons; Vocational Education enrolled 11,589,949 or 97.10 percent of the total and manpower enrolled 346,066 or 2.90 percent of the total number of persons. In 1972-73, the total enrollment in Federally reported programs was 12,214,354 persons; Vocational Education enrolled 12,064,761 or 98.78 percent of the total and manpower enrolled 149,593 or 1.22 percent of the total number of persons.

Distribution of Federal Funds to Vocational Education, MDTA, and EOA. In 1970-71, the total Federal funding for occupationlly reported training through Vocational Education, MDTA, and EOA was $1,240,146,542. Of this total, the amount expended through Vocational Education was $393,926,863 or 31.8 percent of the total. The allocation for MDTA was $335,752,000 or 27.1 percent of the total. The allocation for EOA was $509,691,000 or 41.2 percent of the total Federal monies.

In 1971-72, the total Federal funding for occupationally reported training through Vocational Education, MDTA, and EOA was $1,480,857,460. Of this total, the amount expended through Vocational Education was $464,487,460 or 31.4 percent of the total. The allocation for MDTA was $424,553,000 or 28.7 percent of the total. The amount allocated for EOA was $591,817,000 or 40.0 percent of the total Federal funding.

In 1972-73, the total Federal funding for occupationally reported training through Vocational Education, MDTA, and EOA was $1,273,529,797. Of this total, the amount expended through Vocational Education was $479,725,797 or 37.7 percent of the total. The allocation for MDTA was $380,812,000 or 29.9 percent of the total. The amount allocated for EOA was $412,992,000 or 32.4 percent of the total Federal funding.

APPENDIX B

Reports of Four Consultants
Reviewing Project Baseline
Research and Analysis

Garth L. Mangum, Director
Human Resources Institute
The University of Utah

I have spent about three days time over the past week pouring over your Project Baseline Volumes 1 and 2. I don't know what comments would be the most useful to you. It has been a useful experience for me. You are making a valuable contribution. Both volumes are excellent. I have gone through a similar process for various monographs and books and the 1966 Advisory Council in the past and know what an immense task it is. You haven't produced new data but you have pulled together so much from so many disparate sources that few would have the energy and resources for. Just getting all that data in juxtaposition provides new insights, plus your generally sound analysis.

To some, the greatest needs in making sense of vocational education numerology are: (1) reporting in meaningful occupational categories and (2) longer term followup. Since you are only compiling available data you can't do anything about the latter. Your 19 cluster approach in volume 2 is a beginning solution to the former. One could argue clerical and secretarial for instance, but I'm no expert. Your clusters are better for the purpose than the USOE career education 15. Of course, yours are closer to training clusters. Pushing and perfecting the cluster approach to reporting and analysis will be an achievement worth all the cost and effort of Project Baseline, if nothing else came of it.

I do have some philosophical difficulties with some of the material in Volume 1. I think you claim too much for vocational education and are unduly critical, at least, by implication, of DOL manpower programs. Of course, yours and my reactions reflect our individual backgrounds.

First, I think volume 1 in Chapter I and II overplays vocational education in comparison with on-the-job training and informal learning. The first paragraph in chapter I is contrary to all of the evidence I know about. The first full paragraph on p. 15 is an overstatement. I am also doubtful of statement 3 on p. 6. It is a semantic issue. You could argue far more than that since music courses are occupational for the prospective musician, etc. I would be more disposed to argue that than to give vocational credence to most industrial arts.

On the manpower thing, I recognize my sensitivity. However, where you compare costs of vocational education and manpower programs, you compare apples and oranges. In the second volume you do note the stipends.

You don't note that training disadvantaged adults who are already in trouble in the labor market is quite different from the average high school student or successful upgrading adult. The manpower treatment is also misleading in that only MDTA and Job Corps are vocational education programs. The rest are a mishmash of subsidized employment and transfer payments. The second volume doesn't have the implied criticism but it still has the inclusion of non-skill training programs.

The placement data in volume 2 is excellent and impressive. A great deal should be made of that performance. It would be very useful to put in comparable data on non-vocational students. I would recommend also that you come up with your own definition of a vocational student. If you do others will probably accept it for lack of a clear one now.

Those are my reactions. Again, despite some minor criticisms, it's a real contribution and very well done. If you have some specific queries, I'll be happy to respond. I apologize for slowness and wish you the best.

Erick L. Lindman, Professor
Department of Education
University of California, Los Angeles

After reading the two-volume report, I was impressed by its comprehensiveness. It provides an excellent baseline of information about vocational education and other occupation-related instruction. I noted progress in the selection and interpretation of data from Volume I to Volume II.

Before commenting about the findings related to financing vocational education, I suggest that the term "vocational education", when used in the specialized sense indicated in the glossary, be capitalized (Vocational Education)--or otherwise distinguished from its general use.* This may not be necessary for vocational educators, but it would be helpful to other readers of the report.

Information Concerning Number of Contact Hours

A major limitation upon the interpretation of information concerning vocational education is the lack of data about the amount of time spent in vocational education courses.

I am aware that this information is not required by the existing reporting system. But it seems to me that Project Baseline should provide estimates of the percent of full-time students spend in vocational classes--and use this information in the interpretation of other data. Moreover, in its excellent list of recommendations, the Project should include specific suggestions for a standardized procedure for collecting "aggregate annual contact hours" for each course, or group of courses.

To illustrate the use of such information in the interpretation of enrollment trends, assume that the average enrollee in adult programs spends four hours per week for one semester in a vocational education class; the average vocational education enrollee in secondary schools spends four hours per week for two semesters; and the average enrollee in postsecondary schools spends eight hours per week for two semesters in vocational classes.

Under these assumptions, to estimate the aggregate annual contact hours for each enrollment category, it would be necessary to multiply the adult enrollment by 60 hours; the secondary vocational education enrollment by 120 hours; and the postsecondary vocational education enrollment by 240 hours.

Estimates of aggregate annual contact hours are especially important in comparing enrollment and expenditure trends from year to year. For example, the percent of vocational education enrollment in the three categories for 1966 and 1972 were:

*This suggestion has been followed in the present report.

| | 1966 | 1972 |
|---|---|---|
| Adult | 42% | 31% |
| Secondary | 51 | 56 |
| Postsecondary | 7 | 13 |
| | 100% | 100% |

Note that in 1972 larger percentages of the vocational education enrollment were in the secondary and postsecondary schools--which probably require more contact hours of instruction per enrollee than is required of the typical adult education enrollee. This means that, for the same total number of enrollees in vocational education, more contact hours of instruction were required in 1972. This, of course, is significant in interpreting expenditure trends.

If the assumptions about the average annual number of contact hours per enrollee are correct, the mix of adult, secondary, and postsecondary enrollments in 1966 and in 1972 would require 13% more contact hours per enrollee in 1972. Thus, the changing number of contact hours per enrollee may be the most significant factor in comparing expenditures per enrollee over a several year period.

Even if it is not possible to make valid estimates of "aggregate annual contact hours" for various enrollment classifications, the report should point out that contact hours per enrollee differ greatly and conclusions which assume otherwise are not justified. There are a number of places in the report where this fact should be pointed out.

For example, on page 7 of Volume I, increases in expenditures for vocational education are compared with enrollment trends, without commenting on changes in the number of contact hours per enrollee. Similarly, on page 9 of Volume II, it is pointed out that the percent of vocational education expenditures in secondary schools exceeds the percent of vocational education enrollees in secondary schools--a fact which may be explained by the greater number of contact hours per enrollee.

Although this problem permeates the financial section of the reports, it is especially important when conclusions are drawn from enrollment and expenditure data. For example, on page 143 of Volume II, the large enrollments in relation to expenditures for adult vocational education are noted followed by this comment:

> There is cause for concern here. A common assumption is that the action is where the money is; this certainly appears not to be the case in adult vocational education. Adult vocational education enrolls thirty percent of the total enrollment, yet it operates on 7.4 percent of the total funds. Adult vocational education reaches fewer persons per thousand than either the secondary or postsecondary programs. This was shown in the section on enrollment. The inference is strong that there is a causal relation between low dollar investment (with a likely parallel low staff time investment) and low growth rate.

It seems to me that the tendency for adult vocational education programs to have fewer contact hours per enrollee should be noted in explain-in the facts.

In addition to noting the "contact-hour problem" in the interpretation of information about vocational education, the Baseline Project should include a strong recommendation for standardized reports of "aggregate annual contact hours" for vocational courses, programs, or clusters.

If Project Baseline were able to provide estimates of "aggregate annual contact hours," expenditures per contact hour would provide a useful indicator for planning purposes.

Moreover, the number of contact hours required for a student to attain entry level skill for various occupations could be estimated, along with the cost per contact hour. With such information, the cost of preparing a student for various occupations could be estimated--providing useful planning information.

The Consumers Price Index

The Consumers Price Index is based upon a typical family budget, which does not reflect what a school buys. For a typical school system, about 85% of all current expenditures are for salaries and wages. Salaries and wages have increased more rapidly than the Consumer's Price Index. Thus what the school buys--personal services--has increased in price much more rapidly than the Consumer's Price Index. For this reason, the use of the Consumer's Price Index to indicate the buying power of school dollars is misleading. Better estimates of the buying power of school dollars can be obtained by using indices of salaries and wages.

Another and perhaps better way to get at the problem is to compare vocational education expenditures with the total amount spent for public schools. If the Federal contribution for vocational education, as well as the total reported cost, were presented as a percent of public school expenditures, a better picture of progress (or lack thereof) in the development of vocational education would be presented.

Full-Time Equivalent Teachers

The report notes the need for the FTE number of vocational education teachers. The need for this information is great--and I enthusiastically support the recommendation that it be included in the information system. Perhaps the report should offer specific suggestions concerning the definition of full-time equivalent vocational education teachers.

The Percentage Approach to National Estimates

The report estimates that approximately 40% of all secondary school students were enrolled in one or more vocational courses. If we assume that a typical vocational student in secondary schools devotes 1/4 of his time to vocational courses and 3/4 to other courses, then the amount of student time devoted to vocational education in American secondary schools is 40% X 25% or approximately 10%.

From this type of analysis it is possible to estimate the percent of school time and resources devoted to vocational education courses. Moreover, since the vocational courses usually cost more per student, it is possible to estimate the percent of all school expenditures needed to pay the additional cost of vocational education in public secondary schools.

In order to make this analysis the following quantities are defined:

$P_1$ = Percent of students enrolled in organized vocational programs. A student enrolled in a vocational program is counted as one enrollee even if most of his instruction is in general education.

$P_2$ = Percent of school time the average vocational student spends in vocational education courses.

$P_3$ = Percent by which the average annual current cost per student of vocational courses exceeds the corresponding average cost of all other courses.

$P_4$ = Percent of all secondary school expenditures required to pay the additional cost of vocational education courses.

Using these definitions the formula for $P_4$ is:

$$P_4 = \frac{P_1 P_2 P_3}{1 + P_1 P_2 P_3}$$

Substituting the values:

$P_1 = 40\%$
$P_2 = 25\%$
$P_3 = 50\%$

the value for $P_4$ is 4.8%. This means that 4.8% of all expenditures of public secondary schools is required to pay the additional cost of vocational courses and three times this amount (14.4%) is required to pay the total current cost of vocational courses in secondary schools.

These estimates, of course, are based upon the values assigned to $P_1$, $P_2$ and $P_3$. Hopefully, Project Baseline can provide valid estimates for these quantities so that they can be used to provide a better rationale for the Federal contribution for vocational education.

Concluding Comments

I have confined my comments to the sections of the report which pertain to financing vocational education, on the assumption that other reviewers, more familiar with vocational education, would point out ways to improve the nonfinancial parts of the report. In my studies of financing vocational education, I have encountered the need for information

concerning the aggregate annual number of contact hours for various students, courses, and programs. In the Project Baseline Report the great difference in the cost per enrollee in vocational education and in MDTA and EOA programs, is explained in part by differences in contact hours per enrollee. Until this information is supplied, many important analyses and interpretations are impossible.

Robert Calvert, Jr., Chief
Adult & Vocational Education
Department of Health, Education, and Welfare

The draft reports on Project Baseline arrived and I have spent some time looking the first volume over. As your schedule requested a reply by March 15, I am going to respond on the basis of not as detailed analysis as I would have preferred.

Like most evaluators, I tend to look for things which might, or should, be changed--rather than parts with particular merit. Thus, my suggestions emphasize which might be changed or strengthened. This in no way discounts the wealth of data which the report includes.

My comments are made as they occurred to me, where pertinent a page reference is cited.

1. On page 7, you cite the low Federal cost of $43 for a vocational education trainee. Most education is locally-supported (at least in theory). Thus, the contrast between the cost per VE and per MDTA trainee may require more elaboration. For the MDTA trainee, no local or state funds are required. For the VE trainee, public tax funds (in addition to Federal funds are required). Congress is concerned with the total tax burden and total public expenditures, not just the Federal share.

   My suggestion is that you leave the first part of this section as it is, but show the total public contribution per VE and MDTA trainee. I suspect it will still make your point, but not quite as statistically startling.

2. A major problem, in handling this volume of data, is to avoid losing your readers between the summary chapter at the beginning and the recommendation chapter at the end.

   We often try to solve this problem, where it occurs, by a policy of eliminating any table which deals with data already presented. Following this logic, you could cut your tables by eliminating all those which show already presented materials in another form--such as rank orders of States, appearing just after tables with the base data. My first notation on this cites Table 14B, but there are many like this.

   Also, the draft seems committed to two methods of presentation: text pages and separate tables. A bit more variety may help, such as short four or five line text tables.

3. I can't locate the reference now, but I seem to recall a Baseline proposal to have UCLA develop a model of supply and demand. This is a very important activity and one that I think should be encouraged.

   My notes, however, suggest that supply was to be limited to the products of public schools. My comment, obviously, is that the supply of persons trained in private schools (particularly postsecondary career schools) needs to be included if the real supply-demand ratio is to be determined.

4. Sometime, you might want to make a study of the reliability of data provided to the States by local districts and schools. So much of what you, and we, are doing assumes that the data from the States is accurate.

5. Some readers are going to question the inclusion of homemaking and consumer affairs, industrial arts, and prevocational in the national totals. Sidney Marland always insisted that vocational education statistics either exclude or earmark the homemaking part of home economics.

6. On page 67, the point is made that about one-fourth the number of current teachers is the total for students preparing for teaching. The comment is made that this is much too low. Why is this too low? In 20 years, the schools will have trained five-fourths of the number of current teachers.

7. On page 67, a discussion of teacher-student ratios begins. The important point is the average size per class. The figures in Table 19B, showing the ratios for California (70 to 1) and Vermont (22 to 1), may be challenged. The table seems to imply that California has three times as many students in the average class.

   There are many ways to consider this problem and react to it. I make it for whatever it is worth.

8. In the review of available data, I seem to have been remiss in sharing with you information from USOE. Two of our NCES studies (Participation in Adult Education, 1969 and 1972: Vocational Education, Characteristics of Students and Staff, 1972) have data which would seem appropriate for your reporting.

9. On page 194, the thought occurs to me that State comparisons are often not too meaningful--or at least don't prove too much. Clearly, the ratio of agriculture students to population should be greater in Montana than New Jersey. Likewise, New York should have a higher ratio or more persons being trained for office occupations than Vermont.

Comparisons between standard metropolitan areas would be more meaningful than any state or regional analysis.

10. On page 229, the point is made that we need individual student enrollment data as well as a good followup system. Perhaps, we might accomplish the same results by special studies and sampling projects.

11. On page 420, no mention was made of the recent publication of the National Commission of Financing Postsecondary Education. Congress has this report very much in mind now and it might be well to use it in your report.

These thoughts are not well organized. I hope they are of some help.

Good luck with your work.

David S. Bushnell
Director for Program Development
Human Resources Research Organization

Thank you for giving me the opportunity to review the two Project Baseline Reports (Vols. I and II). Attached is a detailed commentary on the tables and information contained therein. What follows are some overall observations.

First, it is not all together clear to me just who is considered to be the audience for these reports. If, infact, Congress and the Vocational Educational Advisory committee are the intended recipients, I would suggest that the significant findings listed in Chapter 1 in both Vols. also contain a policy implication and recommendation section. Your move toward separating the narrative portion from the statistical tables this year is a good decision. A useful model for the type of report I have in mind is that published by the Committee of Economic Development re Educational Research Priorities (circ. 1968). Second, I feel that there is not enough critical commentary. The reader gets the feeling that some of the more glaring shortcommings are being glossed over and that these should be highlighted for corrective action. Third, someone should do a more thorough review of the literature in that there have been follow-up evaluations of MDTA and EOA programs and there is data available on the experience of the trainees once they have completed training. One of the studies was done by Gerald Gurin at the Institute for Social Research of the University of Michigan.

You are to be congratualted for successfully completing the first two phases of what is obviously a major undertaking. I also think that the additional analysis and supplementary reports planned for this year are right on target, particularly the supply/demand tables. I hope that your supplementary report on "Career Education in the U. S. Today" looks in on community colleges. The nationwide study that I did in 1971 (see Organizing for Change: New Priorities for Community Colleges, McGraw-Hill, 1973) revealed that there were an estimated 400,000 full-time students enrolled in career and technical education programs. This of course does not include the even greater number of part-time students pursuing occupational goals. I hope the attached, more detailed comments, prove to be of assistance.

## HumRRO Critique

The following comments and suggestions are based on an examination of "Learning a Living Across the Nation," Volumes I and II.

1. Many of the tables contained in the two volumes present vocational education figures by state, expressing them as a percent of the total population of that state. These figures can be somewhat misleading given

the occupational goals of vocational education. If vocational education is oriented primarily toward employment, then enrollment should not be expressed in terms of total state population. Instead, it should be expressed in terms of "employable persons" residing within the state. Because the total population of each state contains large numbers of people too young or too old to work, the enrollment figures now appearing in the tables are too low when expressed as percentages. A more adequate statistic would be derived by comparing the total number of persons enrolled in vocational education with the number of persons who could benefit directly from these [illegible]es (i.e., those who are at an employable age). This is not meant to imply that young children and elderly people do not benefit from vocational education; their benefits, however, tend to be indirect rather than direct.

2. Along a similar argument, the numbers of non-working age persons residing in a state may affect a state's rank when the total population is used to calculate the percentage of persons enrolled in vocational education. That is, not only would the resulting percentages be too low an estimate of the emphasis placed upon vocational education within each state, a state's rank among the other 49 states may also be affected. Certain states, such as Florida, contain disproportionately large numbers of elderly people. It is likely that some states also contain disproportionately large numbers of children because of migration and differences in birth rate. Enrollment figures, when expressed as percentages of the total state population, would be disproportionately lower in these states than similar figures from other states having relatively fewer children or fewer elderly persons. Thus, states with comparatively large numbers of children or elderly people are probably ranked too low, while states with comparatively small numbers of children or elderly people are probably ranked too high.

3. This problem is overcome to some extent by the tables in which enrollment in secondary vocational education, post-secondary vocational education, and adult vocational education are expressed in terms of the population age groups for whom these programs are aimed. However, even here there is the basis for possible distortion in the interpretation of the tables. In particular, the age group 15-19 years who are enrolled in secondary vocational education includes a large number of students enrolled in consumer and homemaker training. The age group 20-24 years enrolled in post-secondary vocational education, and the age group 25-64 years enrolled in adult education are enrolled much more extensively in occupation-oriented training. Since the figures for the 15-19 years include many who are enrolled in non-occupation oriented training, the tables are not readily comparable. For example, Volume I shows that 26.3% of 15-19 year olds are enrolled in secondary vocational education, while 6.6% of 20-24 year olds are enrolled in post-secondary vocational education and 3.1% of 25-64 year olds are enrolled in adult vocational education. If the 15-19 year olds who are not enrolled in occupational training are removed from the data, the figures from this group would be much closer to the figures from the group of 20-24 year olds and from the group of 25-64 year olds.

4. The information pertaining to minority group members and the disadvantaged should be expanded to include figures by occupational area

or cluster. The minority group goal is not only to provide employment opportunities, but to provide these opportunities in occupational areas where there have been restrictions in the past. Obviously, vocational education must play an important role in accomplishing this objective. However, the information presented in these two volumes does not seem to focus upon this particular problem. While there was an abundance of information concerning minority group enrollment in vocational education, the data were too broad in scope. It is suggested that data be obtained, if possible, showing the enrollment of minority groups in each occupational area within vocational education. The usefulness of this information would be further enhanced if data could also be obtained regarding the percent of graduate enrollees within each minority group finding employment in the areas for which they were educated. Thus, if certain groups of students have difficulties finding employment in a given occupational area, special efforts can be made to open up this area to the minority groups in question, or perhaps students from these groups could be given training in other occupational areas.

In presenting data on minority group enrollment in different occupational areas, an historical approach would also provide useful information. By comparing enrollment in each area with enrollment in the same areas in the past, it would be possible to identify minority group occupational trends.

5. In Volume II, several graphs are contained showing the changes in occupational area enrollment from 1961 to 1972. Considering the fact that the population increased during this period, an increase in enrollment could be caused, at least in part, by an increase in population. To help the reader determine how much of the increase can be attributed to population growth, it is recommended that a second line be drawn within each graph showing the change in population during that period. The population units can be given on the right side of each graph, while the enrollment units remain on the left side. The line indicating population should begin at the same point on the graph as the point of origin of the line indicating enrollment. It would then be easy for the reader to determine whether enrollment within each area increased more or less rapidly than the population itself.

6. In presenting historical data, an opportunity is offered in which to assess the effects of vocational education on employment during various phases of the economy. During a period of 10 years, there are generally some years which are recessionary in character, and others in which there are relatively rapid growth rates in the economy. It would be important to examine how well vocational education can assist graduates to find employment during these different phases of the economy. Thus, the employment rates among vocational education graduates can be presented separately for these different periods and can be compared with those of non-graduates. A more analytic analysis by occupational area would be even more useful since it would provide information concerning the susceptibility of each area to economic factors.

7. Coordination with the Employment Services of the various states may also provide useful information concerning the effects of vocational

education on employment. If some state Employment Services maintain information on vocational education, the effects of this training on obtaining employment can be ascertained. By comparing the Employment Service's success in placing persons with and without vocational education, or with different types of vocational education, an estimate of the program's impact can be made. It is unlikely that such information is currently maintained in the records of Employment Service offices in most states. However, because of the potential utility of this type of information, it would be worthwhile attempting to persuade the Employment Service to keep such information on file. Furthermore, if this information can be obtained by occupational area, its usefulness would be further enhanced.

8. A major weakness of the data presented in the two volumes is the failure to distinguish between degrees of education. While an adequate explanation was presented explaining why it was necessary to include students having only one hour of vocational education per week in the same tables as those with several hours of education per week, the problem is so serious that a major effort should be made to solve it. Obviously, one hour of education is not comparable to forty hours of intensive training in an occupational area designed to lead to full-time employment. Yet, the enrollment figures presented in the reports include both. Furthermore, it is possible that states ranking low in total vocational education enrollment may be more successful than states ranking high in providing a satisfactory level of employment training. While it may be true that forcing schools to maintain such information may cause them to eliminate vocational education from their curriculum, there are likely to be other methods for obtaining such data. For example, a few questions concerning vocational education could be superimposed upon a survey of secondary school or post-secondary school students that is being conducted for other purposes. Numerous surveys are conducted annually concerning drug use, attitudes of youth, and other issues. Perhaps these students could also be asked in what vocational education courses they are enrolled and how many hours per week are spent in these courses.

As an alternate approach, a sample of schools could be selected and a survey could be conducted to determine the level of effort involved in vocational education in these schools. While it is understood that the purpose of Project Baseline is to work with existing data, this issue is too important to follow this guideline rigidly.

9. A closer examination should be made of the effectiveness of work-study vocational education. If information is available, data should be presented showing how enrollees in the program differ from enrollees in other types of secondary vocational education, and if the employment rate is higher for this group. Similar information should also be obtained, if possible, for students enrolled in cooperative vocational education.

10. The data presented concerning programs for handicapped persons are too limited in scope to provide an adequate description of vocational education programs for these persons. If possible, data should be obtained concerning the type of handicap for which the program is targeted, the types of vocational education provided by these programs, and their success in enabling handicapped persons to find employment.

11. As an alternate procedure for determining the impact of vocational education on the employment market, it may be possible to obtain data from industries most likely to hire vocational education graduates. For example, employers in different industries could be asked whether or not they give preference to graduates of vocational education programs and, if so, to what graduates of what types of programs. If educational information is kept on employee records, they can be examined to determine the proportion of workers having received vocational education. If such information is not available on records, perhaps a short survey of employees can be made to determine the proportion who have received vocational education. If such information is available from company records, or if surveys can be conducted, then it would be advantageous to compare the proportion of vocational education graduates in different industries. This type of information would be especially useful in determining where future emphasis should be placed within vocational education.

12. The student/teacher ratios given in Tables 19A-27 of Volume I are of dubious value. Although the report clearly states that the tables are difficult to interpret since teachers can have different numbers of classes, the difficulty in interpreting the meaning of the data makes it easy for the reader to misinterpret their implications. Unless data can also be presented concerning either class size or number of classes taught per teacher, the tables ought to be omitted from the report.

13. Most of the data presented in the reports combine information from students enrolled in work oriented programs and those enrolled in non-work oriented home economics programs. While it is not meant to disparage the importance of consumer oriented or homemaking oriented programs in home economics, they are nevertheless qualitatively different in intent from work oriented programs. Both types of programs are obviously intended to help persons in life, but they accomplish this objective in different ways. The common thread between them is simply not strong enough to warrant their repeated combination in the data tables. It is strongly urged, therefore, that the data from work oriented programs be presented separately from that of non-work oriented programs. Although this would result in an extensive lengthening of already lengthy reports, the added refinement in the data would overcome this disadvantage. Furthermore, by presenting work oriented secondary vocational education data separately from non-work oriented data, more appropriate comparisons could be made between the programs at the secondary, post-secondary, and adult levels since the secondary school data would no longer be confounded by non-work related statistics.

APPENDIX C

Summary of Three Conferences of State
Directors of Vocational Education
To Review Project Baseline Research

April 8-9, 1974
April 16-17, 1974
April 23-24, 1974

Twenty-eight recommendations or expressed positions are identified altogether in summaries from the three conferences. These are somewhat condensed from what was actually a larger number. Eight of the twenty-eight were expressed by all three conferences; one of these was strongly emphasized by all three, and another by two. Five other positions were expressed by two of the conferences; one was strongly emphasized by both, and another by one of them. The remaining fifteen recommendations were made by one or another of the conferences, with three of these being strongly emphasized.

Recommended by all three conferences and strongly emphasized by each:

The quality of data being reported must be improved and a better system of reporting should be established. The recommendation from all three conferences that was strongly recommended in two: Eliminate altogether any duplication of data collection between the U.S. Office of Education and Project Baseline.

The six remaining recommendations or expressed opinions to which the summaries of all three conferences call attention are as follows:

All handicapped and disadvantaged Vocational Education students sould be reported, not just those in special classes, but those in regular classes as well.

A National automated information system, capable of providing viable current data, should be developed for Vocational Education with provision for Federal assistance in its operation.

Consumer and homemaking should be broken out of Vocational Education data in all tables and analyses oriented toward employment in order to present more realistic figures.

Vocational Education enrollment should be reported in some more meaningful and measurable way, i.e. by contact hour, or full-time equivalent.

All of Dr. Calvert's recommendations in his report on

Project Baseline's research analyses were received with general agreement, most of them strongly supported.

Most of Dr. Bushnell's consultant recommendations were supported, several strongly, with two or three exceptions.

The position supported with strong emphasis by two conferences:

Cost data should be reported by instructional unit, either per contact hour or full-time equivalent. It was generally agreed that these data should represent both direct and indirect expenditures, and should be based on local school accounting systems which pro rate all indirect expenditures by instructional program.

The recommendation from two of the conferences that was strongly emphasized by one of them:

Project Baseline should assume the initiative in developing a list of data needed for National reporting, and should suggest definitions.

The other three positions expressed by two of the conferences were as follows:

The accessibility analysis being made by Project Baseline this year should relate accessibility to employment demand. One of the conferences felt it should also include availability of existing programs to additional students because of capacity.

More data should be collected to measure the impact of Vocational Education on communities.

Most of Dr. Lindman's consultant suggestions were endorsed, with one or two debatable exceptions. (This report was not available to the first conference, but was sent to State Directors who had attended or sent representatives. The fourth consultant report, by Dr. Garth Mangum, was not available at any of the conferences, but was sent afterward to all State Directors.)

The three positions that were taken and emphasized by a single conference were these:

The U.S. Office of Education should clarify and update the OE course codes and then keep them current.

Vocational Education reporting by sex and by race should <u>not</u> be discontinued as the U.S. Office of Education has done this year.

Completions and placement (followup) should continue to be reported by OE code (USOE has also discontinued this). These should, in turn, be grouped into occupational areas or clusters.

The remaining suggestions or positions taken by one or another of the conferences:

Project Baseline should attempt to determine the causal factors in significant changes in the data.

In developing an automated information system for National reporting, the list of data elements should be kept flexible enough for future modification.

The annual report forms for Federal Vocational Education reporting should be eliminated for any State capable of supplying unit data on magnetic tape with which a National center can print out the data by computer.

Some of the data needed for National reporting are: student characteristics, instructional unit costs, followup to include completions and students continuing in school in the same field as well as employed, Vocational Education teacher information (qualifications and class hours taught), program information, direct and indirect instructional costs, and employment market data.

Project Baseline should be getting measurable data on career education, and what the data represent including definitions.

Project Baseline's feedback to the States was strongly endorsed, should be continued and increased if possible.

We should put the proposed accessibility table into this year's report, see what it looks like, and then decide what to do with it another year.

Congress should include a provision in the new Vocational Education legislation providing supporting services for students who need them, to be administered through the regular welfare agencies.

All requests by the Baseline staff for data should be made over the signature of the Project Director, and for him when by phone.

Project Baseline should offer its services to Congressman Perkins and NCCSSO and others who are seeking Vocational Education information which we have in order to prevent duplication of such requests to the States.

Show each State's rank order from the principal tables on a graph in the individual State profile section.

Enlistment in military service should be shown as a placement for former Vocational Education students in view of the modern military placement and training practices.

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